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**ECOSYS P6230cdn**  
**ECOSYS P6235cdn**  
**ECOSYS P7240cdn**  
**PF-5100**

**SERVICE  
MANUAL**

Published in June 2018  
Rev.2

**CAUTION**

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

It may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for proper disposal.

**ATTENTION**

IL Y A UN RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UN MODÈLE DE TYPE INCORRECT. METTRE AU REBUT LES BATTERIES UTILISÉES SELON LES INSTRUCTIONS DONNÉES.

Il peut être illégal de jeter les batteries dans des eaux d'égout municipales. Vérifiez avec les fonctionnaires municipaux de votre région pour les détails concernant des déchets solides et une mise au rebut appropriée.

**Notation of products in the manual**

For the purpose of this service manual, products are identified to the following type.

Product name	Print speed	100 V	120 V	220-240 V	Australia
ECOSYS P6230cdn	30 ppm	○	○	○	○
ECOSYS P6235cdn	35 ppm	×	○	○	○
ECOSYS P7240cdn	40 ppm	○	○	○	○



**Revision history**

<b>Revision</b>	<b>Date</b>	<b>Pages</b>	<b>Revised contents</b>
1	5 February 2018	4-2	Correction: (4) Illustration
		6-14,6-16 to 6-18	Added: Color life counter
		6-29	Correction: Method 2: Service Status Page→ Event log
		7-20,7-28,7-30	Correction: (2-1),(2-8),(2-11)
		7-42	Added: List of JAM Code J4303
		7-102,7-148	Added: C6910
		8-7,8-24	Correction: Main/Engine PWB YC33, Power supply PWB YC105
2	6 June 2018	1-2	Added: Memory: Standard/ Maximum
		4-4	Correction: Name used in parts list
		4-10	Added: IMPORTANT after detaching the primary transfer unit
		4-14, 4-107	Added: IMPORTANT
		4-194 to 4-219	Added: Cassette lift unit
		5-4	Correction: Preparations
		7-12,7-30,7-31	Added: (1-12) 6, (2-10) 1, (2-13) 1
		7-38	Correction: (1-9) 3
		7-50	Correction: J0501_9: engine PWB→ main/engine PWB
		7-78, 7-79	Correction: J4301/J4302/J4303/J4304/J4305/J4309_2, 3, 13
		7-80	Deletion: J4311/J4312/J4313/J4314/J4315/J4319_2
		7-156	Deletion: F040 2 Firmware upgrade

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# Safety precautions

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This booklet provides safety warnings and precautions for our service personnel to ensure the safety of their customers, their machines as well as themselves during maintenance activities. Service personnel are advised to read this booklet carefully to familiarize themselves with the warnings and precautions described here before engaging in maintenance activities.

## Safety warnings and precautions

Various symbols are used to protect our service personnel and customers from physical danger and to prevent damage to their property. These symbols are described below:

**⚠ DANGER:** High risk of serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

**⚠ WARNING:** Serious bodily injury or death may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

**⚠ CAUTION:** Bodily injury or damage to property may result from insufficient attention to or incorrect compliance with warning messages using this symbol.

### Symbols

The triangle ( $\triangle$ ) symbol indicates a warning including danger and caution. The specific point of attention is shown inside the symbol.



General warning.



Warning of risk of electric shock.



Warning of high temperature.

⊘ indicates a prohibited action. The specific prohibition is shown inside the symbol.



General prohibited action.



Disassembly prohibited.

● indicates that action is required. The specific action required is shown inside the symbol.



General action required.





Remove the power plug from the wall outlet.











Always ground the copier.

## 1. Installation Precautions

### WARNING











- Do not use a power supply with a voltage other than that specified. Avoid multiple connections to one outlet: they may cause fire or electric shock. When using an extension cable, always check that it is adequate for the rated current. .... 
- Connect the ground wire to a suitable grounding point. Not grounding the copier may cause fire or electric shock. Connecting the earth wire to an object not approved for the purpose may cause explosion or electric shock. Never connect the ground cable to any of the following: gas pipes, lightning rods, ground cables for telephone lines and water pipes or faucets not approved by the proper authorities. .... 

### CAUTION:





- Do not place the copier on an infirm or angled surface: the copier may tip over, causing injury. .... 
- Do not install the copier in a humid or dusty place. This may cause fire or electric shock. .... 
- Do not install the copier near a radiator, heater, other heat source or near flammable material. This may cause fire. .... 
- Allow sufficient space around the copier to allow the ventilation grills to keep the machine as cool as possible. Insufficient ventilation may cause heat buildup and poor copying performance. .... 
- Always handle the machine by the correct locations when moving it. .... 
- Always use anti-toppling and locking devices on copiers so equipped. Failure to do this may cause the copier to move unexpectedly or topple, leading to injury. .... 
- Avoid inhaling toner or developer excessively. Protect the eyes. If toner or developer is accidentally ingested, drink a lot of water to dilute it in the stomach and obtain medical attention immediately. If it gets into the eyes, rinse immediately with copious amounts of water and obtain medical attention. .... 
- Advise customers that they must always follow the safety warnings and precautions in the copier's instruction handbook. .... 












## 2. Precautions for Maintenance

### WARNING

- Always remove the power plug from the wall outlet before starting machine disassembly. .... 
- Always follow the procedures for maintenance described in the service manual and other related brochures. .... 
- Under no circumstances attempt to bypass or disable safety features including safety mechanisms and protective circuits. .... 
- Always use parts having the correct specifications. .... 
- Always use the thermostat or thermal fuse specified in the service manual or other related brochure when replacing them. Using a piece of wire, for example, could lead to fire or other serious accident. .... 
- When the service manual or other serious brochure specifies a distance or gap for installation of a part, always use the correct scale and measure carefully. .... 
- Always check that the copier is correctly connected to an outlet with a ground connection. .... 
- Check that the power cable covering is free of damage. Check that the power plug is dust-free. If it is dirty, clean it to remove the risk of fire or electric shock. .... 
- Never attempt to disassemble the optical unit in machines using lasers. Leaking laser light may damage eyesight. .... 
- Handle the charger sections with care. They are charged to high potentials and may cause electric shock if handled improperly. .... 



### CAUTION

- Wear safe clothing. If wearing loose clothing or accessories such as ties, make sure they are safely secured so they will not be caught in rotating sections. .... 
- Use utmost caution when working on a powered machine. Keep away from chains and belts. .... 
- Handle the fixing section with care to avoid burns as it can be extremely hot. .... 
- Check that the fixing unit thermistor, heat and press rollers are clean. Dirt on them can cause abnormally high temperatures. .... 

- Do not remove the ozone filter, if any, from the copier except for routine replacement. .... 
- Do not pull on the AC power cord or connector wires on high-voltage components when removing them; always hold the plug itself. .... 
- Do not route the power cable where it may be stood on or trapped. If necessary, protect it with a cable cover or other appropriate item. .... 
- Treat the ends of the wire carefully when installing a new charger wire to avoid electric leaks. .... 
- Remove toner completely from electronic components. .... 
- Run wire harnesses carefully so that wires will not be trapped or damaged. .... 
- After maintenance, always check that all the parts, screws, connectors and wires that were removed, have been refitted correctly. Special attention should be paid to any forgotten connector, trapped wire and missing screws. .... 
- Check that all the caution labels that should be present on the machine according to the instruction handbook are clean and not peeling. Replace with new ones if necessary. .... 
- Handle greases and solvents with care by following the instructions below: ..... 
  - Use only a small amount of solvent at a time, being careful not to spill. Wipe spills off completely.
  - Ventilate the room well while using grease or solvents.
  - Allow applied solvents to evaporate completely before refitting the covers or turning the power switch on.
  - Always wash hands afterwards.
- Never dispose of toner or toner bottles in fire. Toner may cause sparks when exposed directly to fire in a furnace, etc. .... 
- Should smoke be seen coming from the copier, remove the power plug from the wall outlet immediately. .... 

### 3. Miscellaneous

#### WARNING

- Never attempt to heat the drum or expose it to any organic solvents such as alcohol, other than the specified refiner; it may generate toxic gas. .... 
- Keep the machine away from flammable liquids, gases, and aerosols. A fire or an electric shock might occur. .... 

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# 1 Specifications

## 1-1 Specifications

### (1) Common function

Item		Description		
		40 ppm model	35 ppm model	30 ppm model
Type		Desktop		
Printing Method		Electrophotography by semiconductor laser		
Paper Weight	Cassette	60 to 163 g/m <sup>2</sup>		
	Multi Purpose Tray	60 to 220 g/m <sup>2</sup>		
Paper Type	Cassette	Plain, Rough, Recycled, Vellum, Preprinted, Bond, Color (Colour), Prepunched, Letterhead, Thick, High Quality, Custom 1 to 8(Duplex: Same as Simplex)		
	Multi Purpose Tray	Plain, Transparency (OHP film), Rough, Vellum, Labels, Recycled,Preprinted, Bond, Cardstock, Coated, Color (Colour), Prepunched,Letterhead, Envelope, Thick, High Quality, Custom 1 to 8		
Paper Size	Cassette 1	A4, A5, A6, B5, B5(ISO), B6, Folio, Oficio II, 216 × 340mm, Letter, Legal, Statement, Executive,16K, Custom(105 × 148 to 216 × 356 mm)		
	Multi Purpose Tray	A4, A5, A6, B5, B5 (ISO), B6, Folio, Oficio II, 216 × 340 mm, Letter, Legal, Statement, Executive, 16K, Envelope #10, Envelope #9, Envelope #6 3/4, Envelope Monarch, Envelope DL, Envelope C5, Hagaki (Cardstock), Oufuku Hagaki (Return postcard), Youkei 4, Youkei 2, Custom (70 × 148 to 216 × 356 mm)		
Warm-up Time (23°C/73.4°F, 60%)	Power on	24 seconds or less	25 seconds or less	26 seconds or less
	Sleep	21 seconds or less	19 seconds or less	17 seconds or less
Paper Capacity	Cassette	500 sheets (80 g/m <sup>2</sup> )*1		
	Multi Purpose Tray	110 sheets (64 g/m <sup>2</sup> ), 100 sheets (80 g/m <sup>2</sup> )		
Output Tray Capacity	Top tray	500 sheets (80 g/m <sup>2</sup> )		250 sheets (80 g/m <sup>2</sup> )
Image Write System		Semiconductor laser		
Photoconductor		a-Si drum (diameter 30 mm)	OPC drum (diameter 30 mm)	
Charging system		Contact charger roller method		
Developer system		Non-magnetic 2-component touch-down developing system Developer: 2-component Toner replenishing: Automatic from the toner container		
Transfer system		Primary: Transfer belt method Secondary: Transfer roller method		
Separation system		Small diameter separation, separation needle		
Cleaning system		Drum: Counter blade + cleaning roller Primary transfer belt: Fur brush	Drum: Counter blade Primary transfer belt: Fur brush	

Item		Description		
		40 ppm model	35 ppm model	30 ppm model
<b>Charge erasing system</b>		Exposure by cleaning lamp (LED)		
<b>Fusing system</b>		Heat and pressure fusing with the heat roller and the press roller Heat source: halogen heater Abnormally high temperature protection devices: thermostat		
<b>Memory</b>		Standard: 1024 MB (On-Board) Maximum: 3072 MB (On-Board +2048MB DIMM)		Standard: 1024 MB (On-Board)
<b>Interface</b>	<b>Standard</b>	USB Interface Connector: 1 (Hi-Speed USB) Network interface: 1 (10 BASE-T/100 BASE-TX/1000 BASE-T) USB Port: 2 (Hi-Speed USB)		
	<b>Option</b>	eKUIO: 1		
<b>Operating Environment</b>	<b>Temperature</b>	10 to 32.5°C/50 to 90.5°F		
	<b>Humidity</b>	10 to 80 %		
	<b>Altitude</b>	3500 m/11482 ft maximum		
	<b>Brightness</b>	1500 lux maximum		
<b>Dimension (W x D x H)</b>		390 x 532 x 469.5 mm / 15.35" x 20.94" x 18.48"		390 x 532 x 409.5 mm / 15.35" x 20.94" x 16.12"
<b>Weight (without toner container)</b>		31.0 Kg / 68.34 lbs	29.5 Kg / 65.04 lbs	28.3 Kg / 62.39 lbs
<b>Space Required (W x D)</b>		390 x 725.8 mm / 15.35" x 28.57" (Using multi purpose tray)		
<b>Power source</b>		100V AC, 50/60Hz, 12.2A 120V AC, 60Hz, 11.3A 220-240V AC, 50Hz, 5.8A	120V AC, 60Hz, 10.0A 220-240V AC, 50Hz, 5.6A	100V AC, 50/60Hz, 10.8A 120V AC, 60Hz, 9.0A 220-240V AC, 50Hz, 5.0A

## (2) Printer function

Item		Description		
		40 ppm model	35 ppm model	30 ppm model
<b>Printing Speed</b> <b>Black and White / Color</b> <b>(Feed from Cassette)</b>	A4	40 sheets/min	35 sheets/min	30 sheets/min
	Letter	42 sheets/min	37 sheets/min	32 sheets/min
	Legal	34 sheets/min	30 sheets/min	26 sheets/min
	B5	40 sheets/min	35 sheets/min	27 sheets/min
	A5	40 sheets/min	35 sheets/min	27 sheets/min
	A6	40 sheets/min	35 sheets/min	27 sheets/min
<b>First Print Time (A4, Feed from Cassette)</b>	<b>Black and White</b>	5.5 seconds or less	6.5 seconds or less	6.0 seconds or less
	<b>Color</b>	6.5 seconds or less	7.5 seconds or less	7.0 seconds or less
<b>Resolution</b>		600 × 600 dpi, 9600 dpi equivalent × 600 dpi, 1200 × 1200 dpi		
<b>Operating System</b>		Windows 7, Windows 8, Windows 8.1, Windows 10, Windows Server 2008/R2, Windows Server 2012/R2, Windows Server 2016, Mac OS X v10.5 or later		
<b>Interface</b>		Hi-Speed USB: 1 Network interface: 1 (10 BASE-T/100 BASE-TX/1000 BASE-T) Optional Interface (Option): 1 (For IB-50/IB-51 mounting) Wireless LAN (Option): 1 (For IB-36 mounting)		
<b>Page Description Language</b>		PRESCRIBE		
<b>Emulations</b>		PCL6 (PCL-XL/PCL-5e), KPDL3 (PostScript3 compatible), PDF, XPS, OpenXPS		

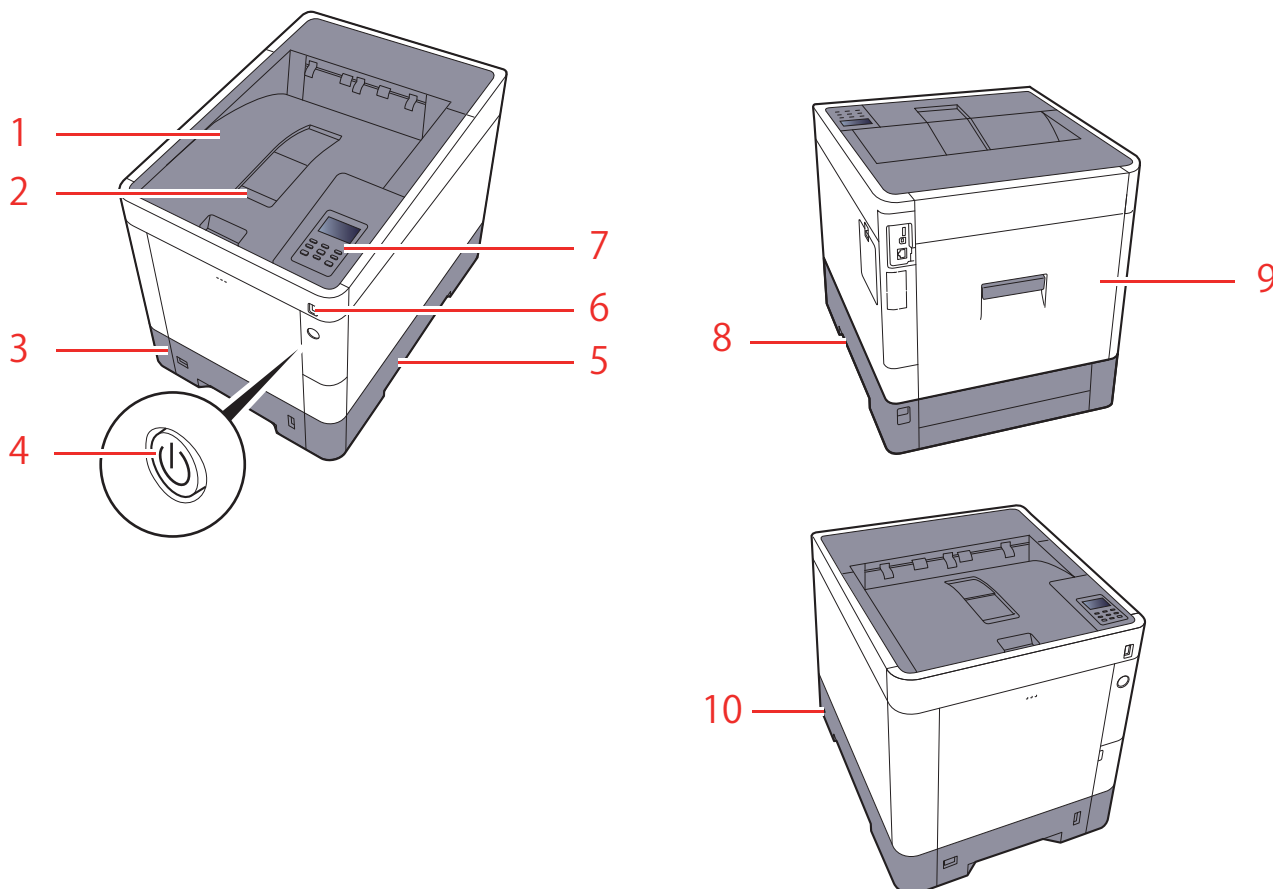
## (3) Paper Feeder (500-sheet x1)

Item	Description
<b>Paper Supply Method</b>	Friction roller feeder (Paper Capacity: 500 sheets (80 g/m <sup>2</sup> ) × Maximum 3 cassettes)
<b>Paper Size</b>	A4, A5, B5, B5 (ISO), B6, Folio, Oficio II, 216 × 340 mm, Letter, Legal, Statement, Executive, 16K, Envelope #10, Envelope #9, Envelope #6 3/4, Envelope Monarch, Envelope DL, Envelope C5, Youkei 4, Youkei 2, Custom (92 × 162 to 216 × 356 mm)
<b>Supported Paper</b>	Paper weight: 60 to 220 g/m <sup>2</sup> Media types: Plain, Recycled, Preprinted, Labels, Bond, Vellum, Color (Colour), Prepunched, Letterhead, Envelope, Coated, Thick, High Quality, Custom 1 to 8
<b>Dimension (W × D × H)</b>	390 × 532 × 116 mm / 15.35" × 20.94" × 4.57"
<b>Weight</b>	4.1Kg or less / 9.04 lbs or less

## 1-2 Part Names

### (1) 30 ppm model

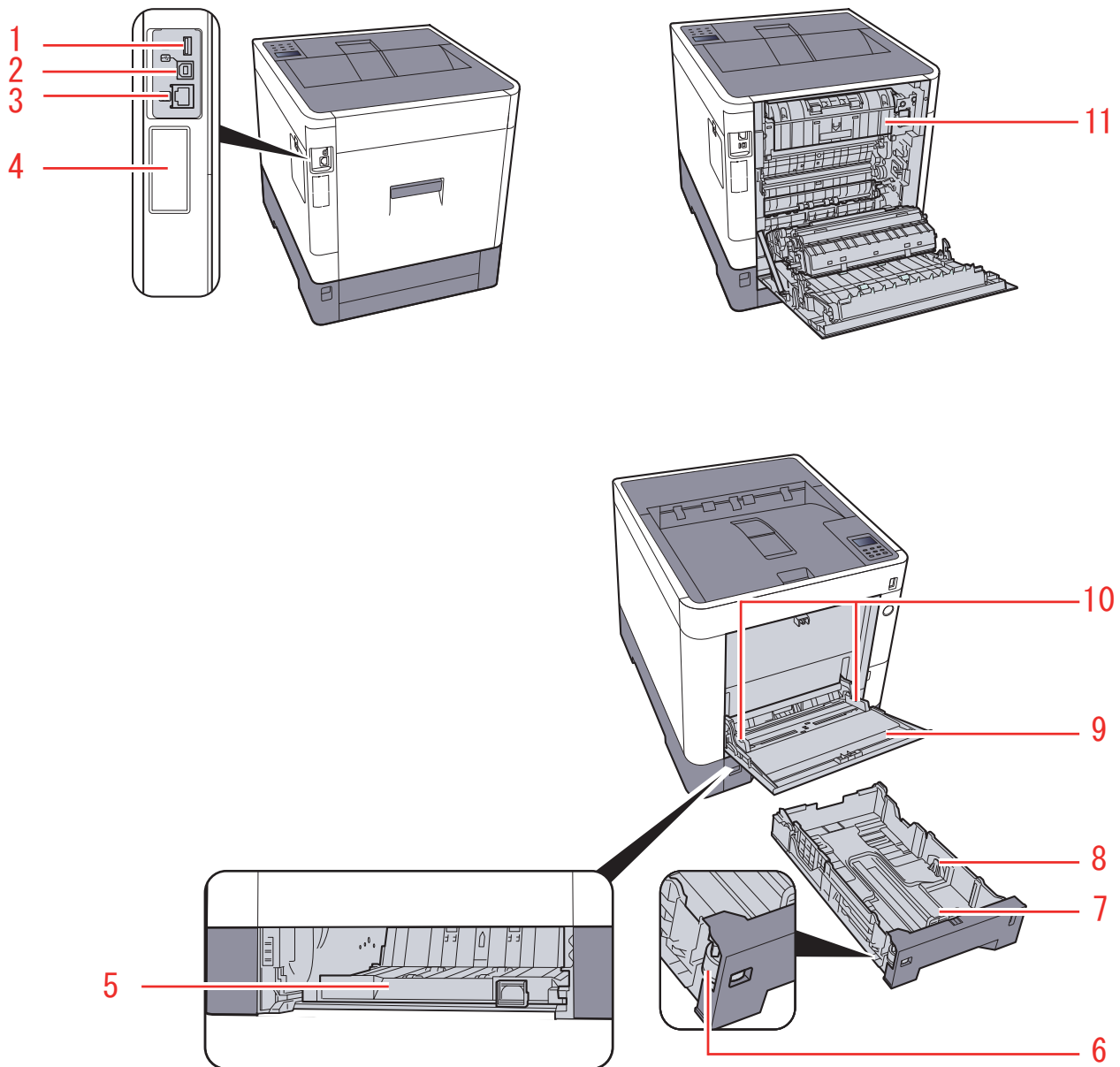
#### (1-1) Main unit exterior



- 1. Top tray
- 2. Paper stopper
- 3. Cassette 1
- 4. Power switch
- 5. Handles

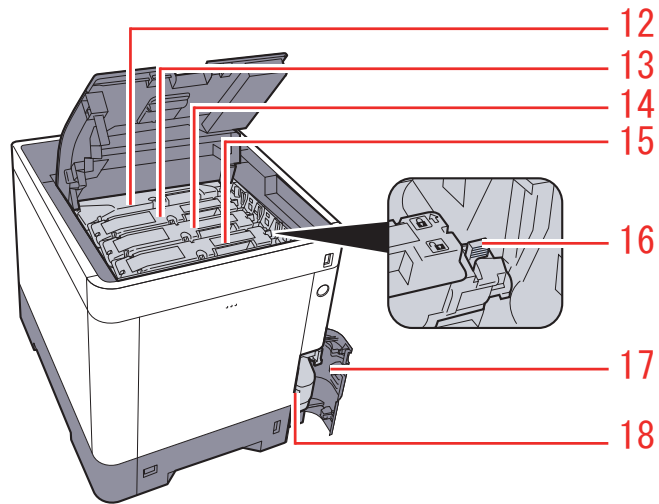
- 6. USB memory slot
- 7. Operation panel
- 8. Handles
- 9. Rear cover 1
- 10. Anti-theft lock slot

## (1-2) Connector / Interior



1. USB port
2. USB interface connector
3. Network interface connector
4. Optional interface
5. Conveying cover

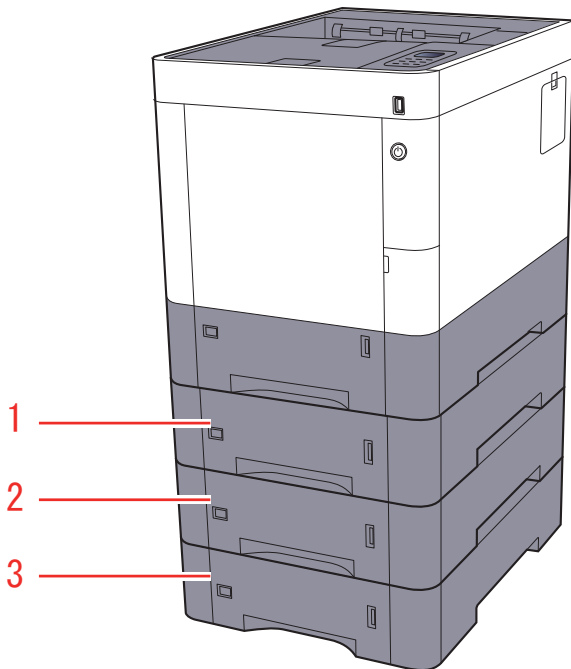
8. Paper width guides
9. Multi purpose tray
10. Paper width guides
11. Fuser cover



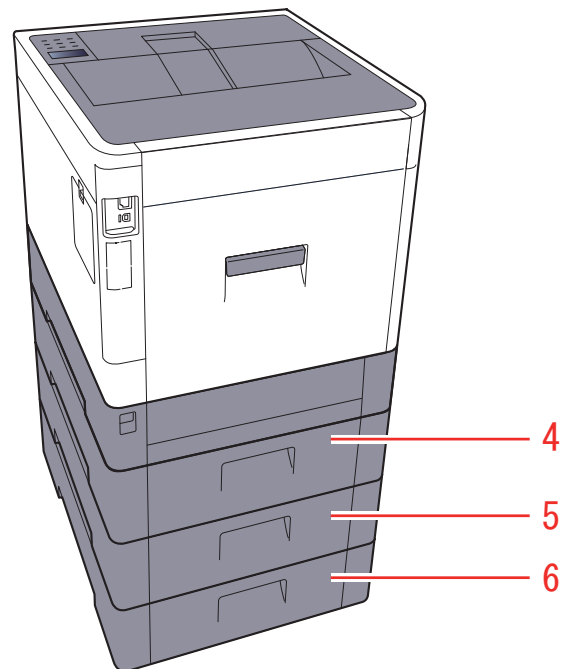
- 12. Toner container (Black)
- 13. Toner container (Magenta)
- 14. Toner container (Cyan)
- 15. Toner container (Yellow)

- 16. Toner container lock lever
- 17. Waste toner cover
- 18. Waste toner box

**(1-3) With Optional Equipments Attached**



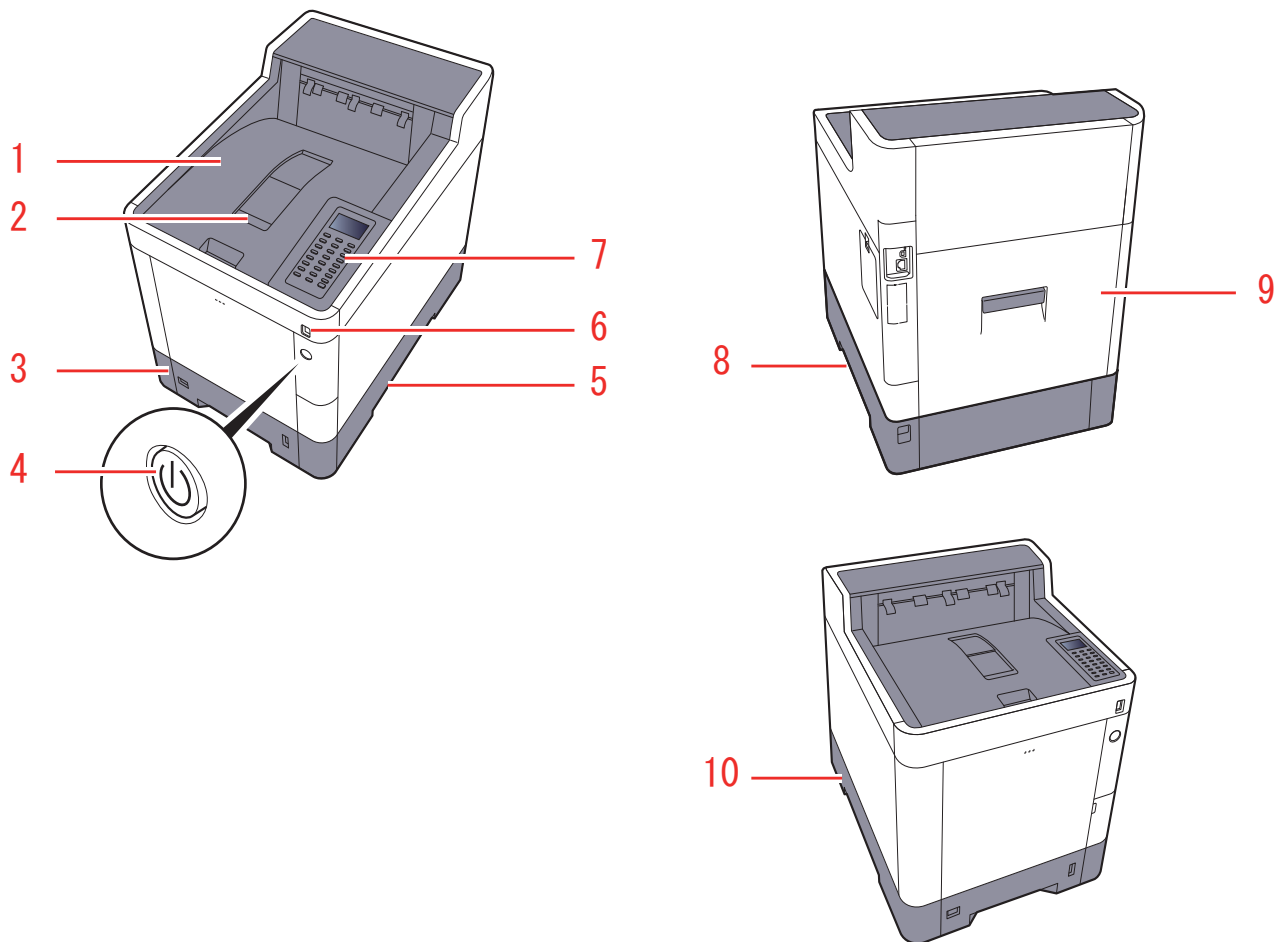
- 1. Cassette 2
- 2. Cassette 3
- 3. Cassette 4



- 4. Rear cover 2
- 5. Rear cover 3
- 6. Rear cover 4

(2) 35/40 ppm model

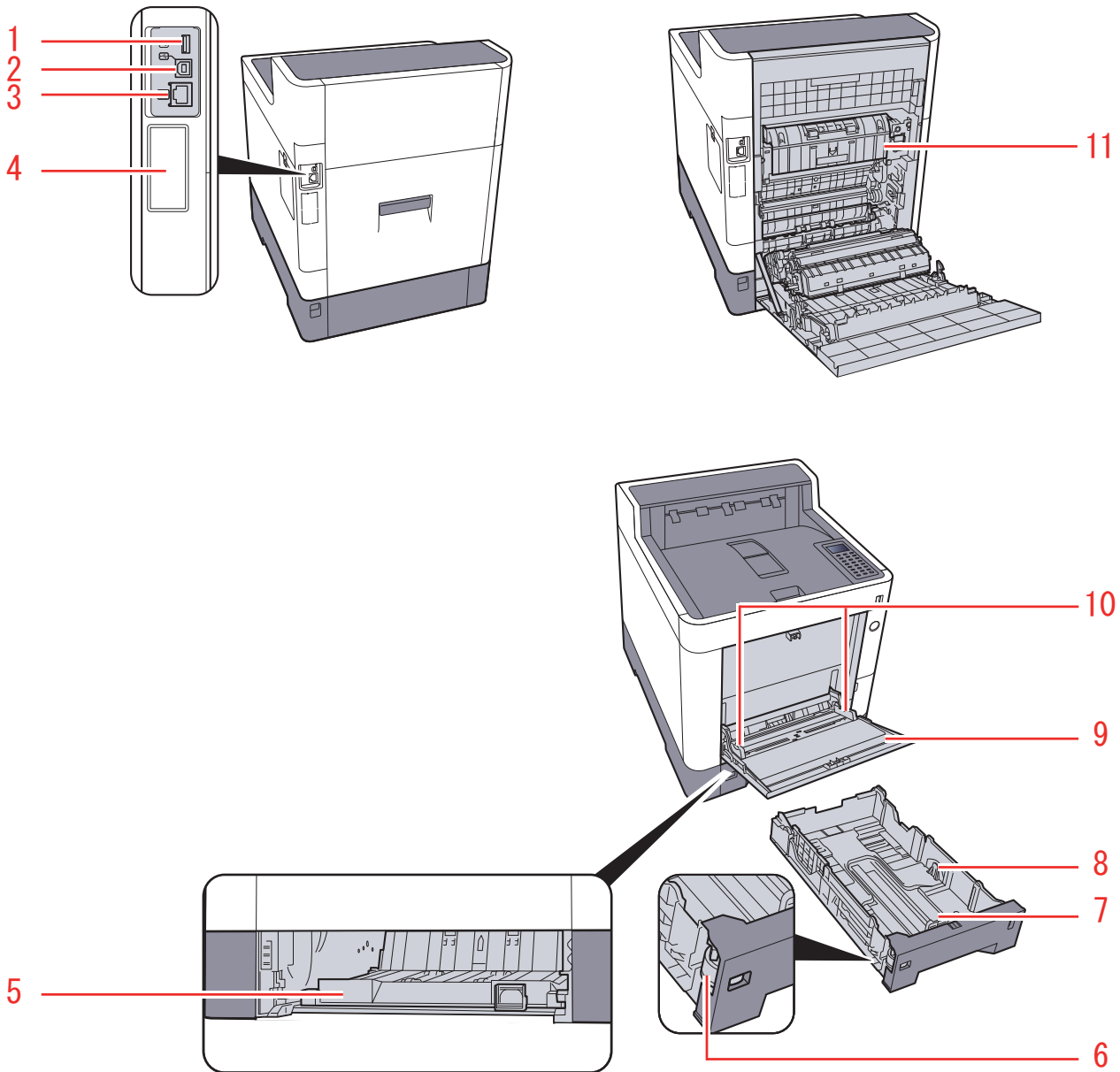
(2-1) Main unit exterior



- 1. Top tray
- 2. Paper stopper
- 3. Cassette 1
- 4. Power switch
- 5. Handles

- 6. USB memory slot
- 7. Operation panel
- 8. Handles
- 9. Rear cover 1
- 10. Anti-theft lock slot

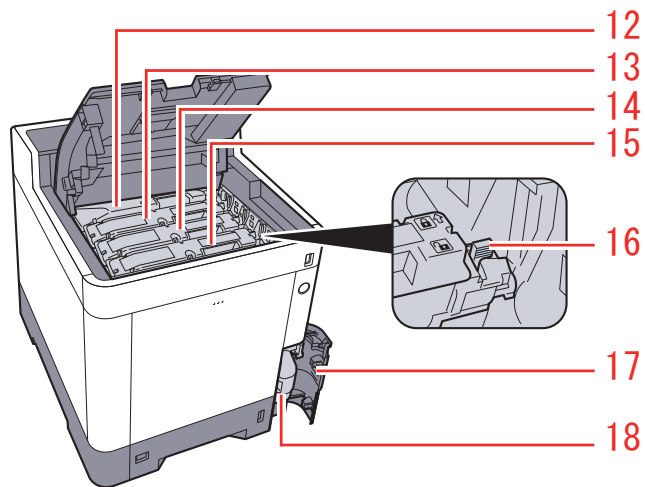
(2-2) Connector / Interior



- 1. USB port
- 2. USB interface connector
- 3. Network interface connector
- 4. Optional interface
- 5. Conveying cover
- 6. Size dial
- 7. Paper length guide

- 8. Paper width guides
- 9. Multi purpose tray
- 10. Paper width guides
- 11. Fuser cover

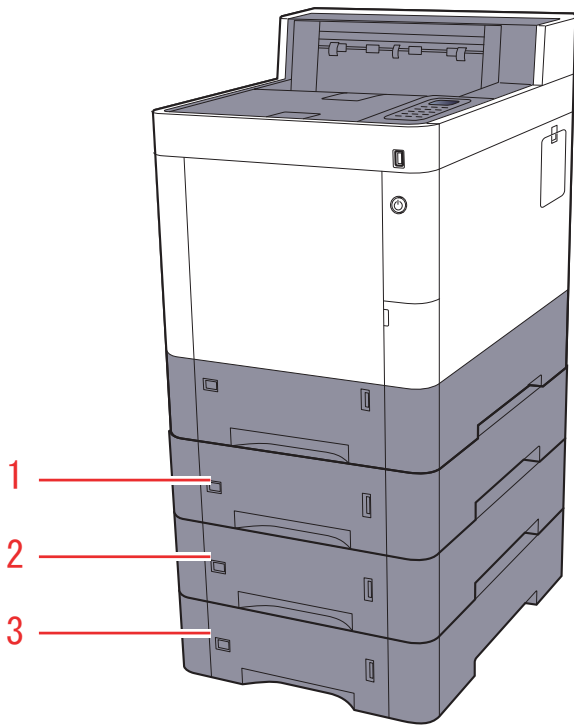




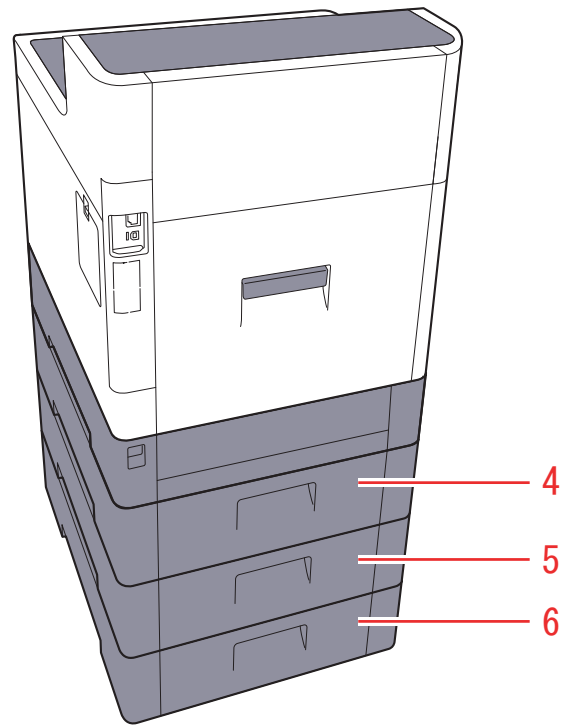
- 12. Toner container (Black)
- 13. Toner container (Magenta)
- 14. Toner container (Cyan)
- 15. Toner container (Yellow)

- 16. Toner container lock lever
- 17. Waste toner cover
- 18. Waste toner box

**(2-3) With Optional Equipments Attached**

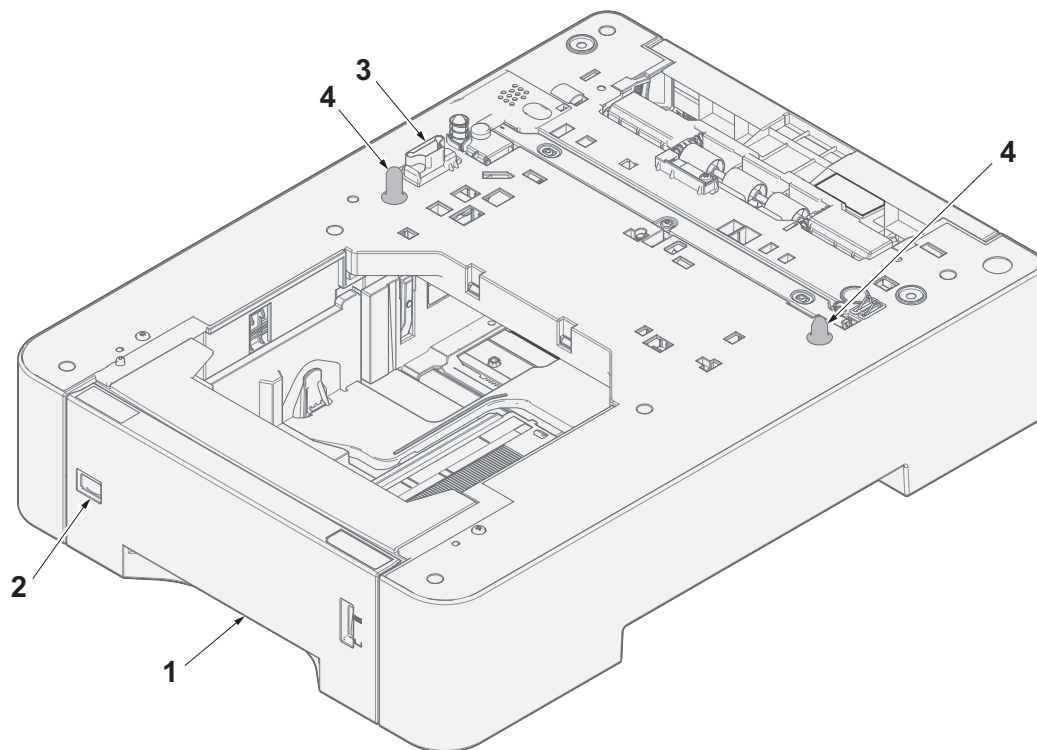


- 1. Cassette 2
- 2. Cassette 3
- 3. Cassette 4



- 4. Rear cover 2
- 5. Rear cover 3
- 6. Rear cover 4

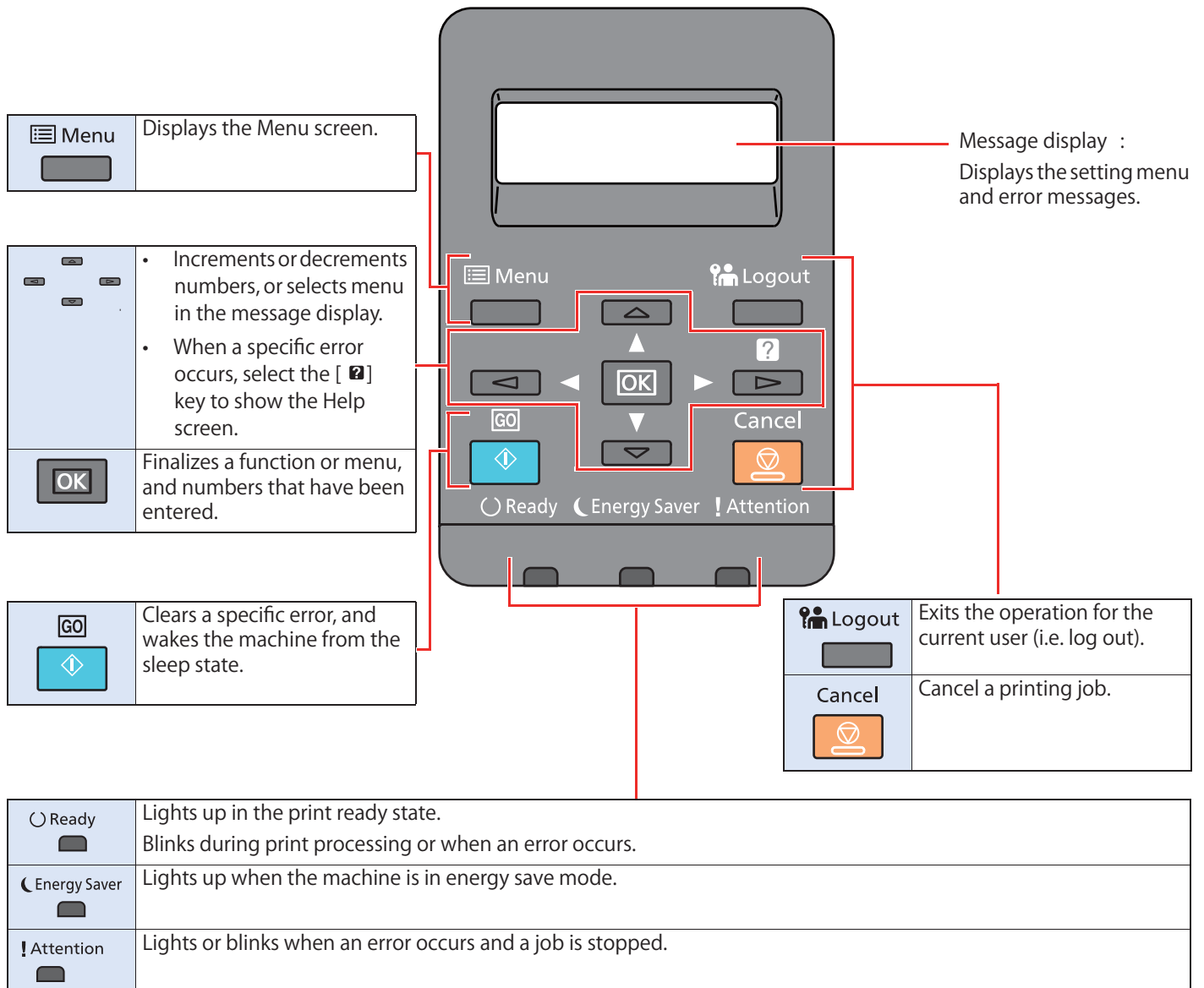
### (3) Part Names of Paper Feeder







- 1. Cassette
- 2. Paper size window
- 3. Interface connector
- 4. Pins

## (4) Operation panel key

### (4-1) 30 ppm model



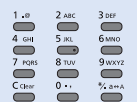



## (4-2) 35/40 ppm model

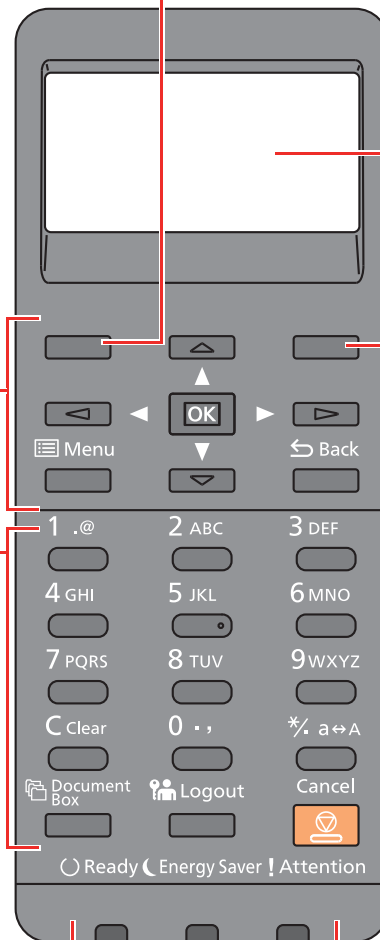
	Displays the Menu screen.
	Increments or decrements numbers, or selects menu in the message display. In addition, moves the cursor when entering the characters.
	Finalizes a function or menu, and numbers that have been entered.
	Returns to the previous display.




Select Key :  
Selects the menu displayed at the bottom of the message display.

Message display :  
Displays the setting menu and error messages.

Select Key :  
Selects the menu displayed at the bottom of the message display.

	Numeric keys. Enter numbers and symbols.
	Displays the Document Box screen.
	Exits the operation for the current user (i.e. log out).
	Cancels or pauses the job in progress.

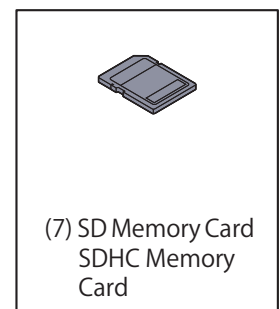
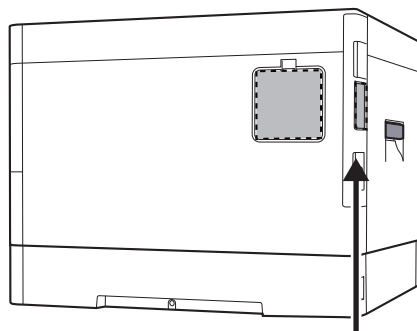
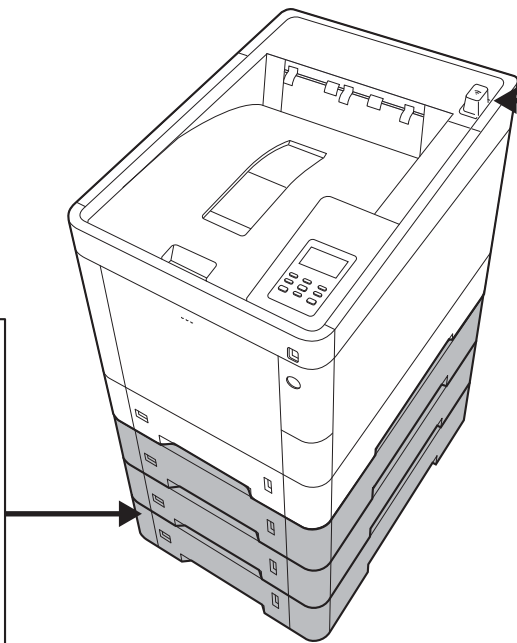
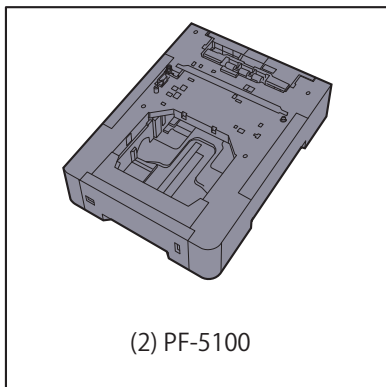
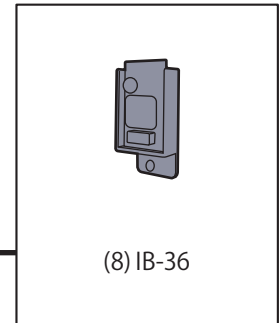
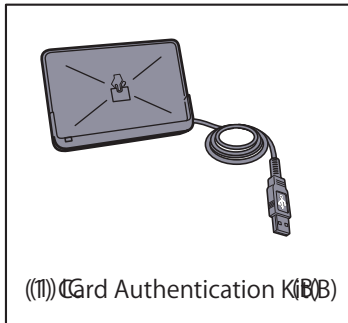


	Lights up in the print ready state. Blinks during print processing or when an error occurs.
	Lights up when the machine is in energy save mode.
	Lights or blinks when an error occurs and a job is stopped.

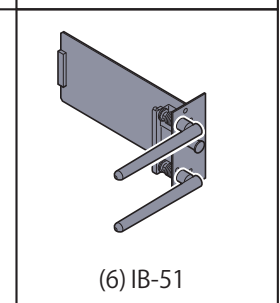
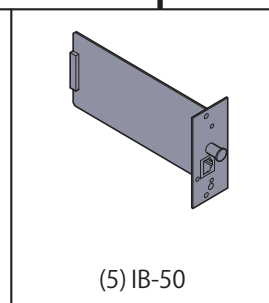
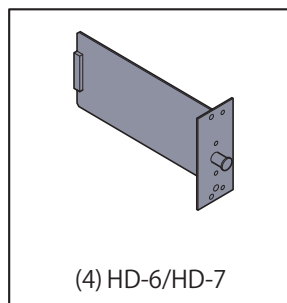
# 1-3 Optional Equipment

## (1) 30 ppm model

The following options are available for this machine.

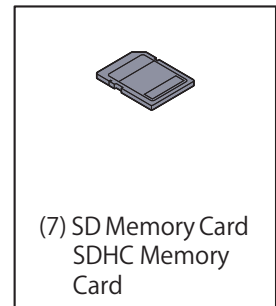
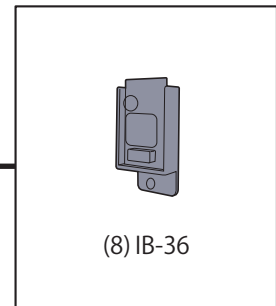
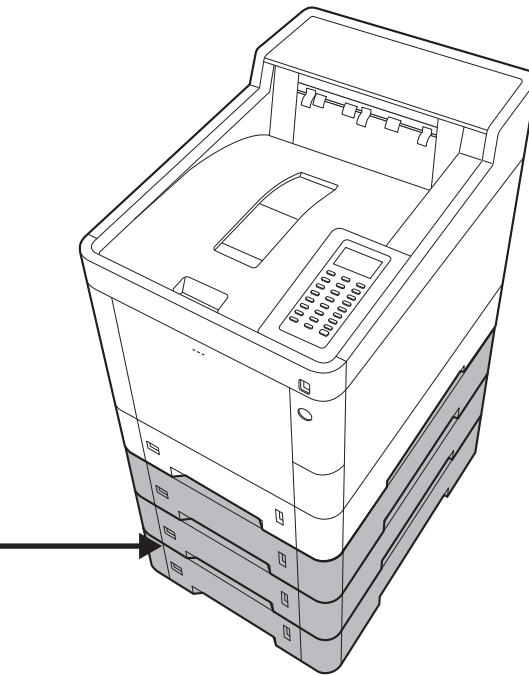
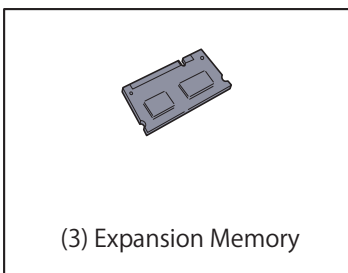
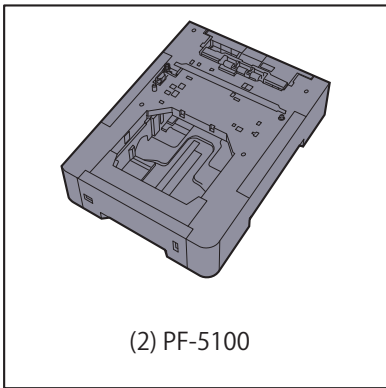
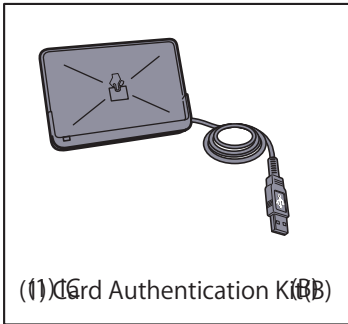


Software option
(9) Data Security kit(E)
(10) UG-33

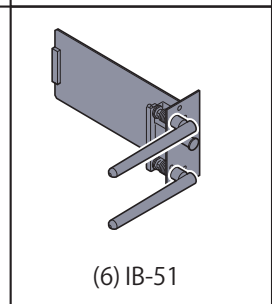
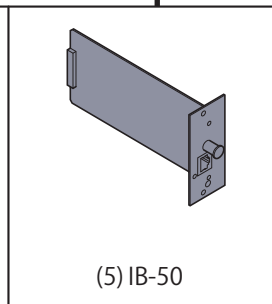
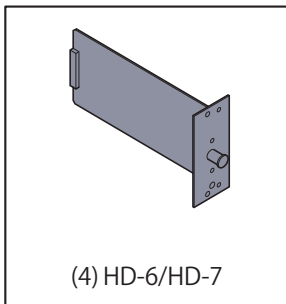


**(2) 35/40 ppm model**

The following options are available for this machine.



Software option
(9) Data Security kit(E)
(10) UG-33



### **(3) Optional Equipment**

#### **(3-1) Card Authentication Kit(B) <Card Authentication Kit>**

User login administration is available using ID cards. To do so, it is necessary to register ID card information on the previously registered local user list. Refer to the Card Authentication Kit Operation Guide for more information about registration.

#### **(3-2) PF-5100 <500 sheets x1 Paper Feeder>**

Three additional cassettes identical to the machine's cassette can be installed in the machine. Paper loading method is the same as the standard cassettes.

#### **(3-3) Memory Module**

The machine can perform more multiple jobs simultaneously by adding more memory. You can increase the machine's memory up to 2,048 MB by plugging in the optional memory modules.

#### **(3-4) HD-6/HD-7 <SSD>**

With an SSD installed in the main unit, received print data can be rasterized and stored in the SSD. This enables high-speed printing of multiple copies using the electronic sort function. Also, you can use the Document Box functions.

#### **(3-5) IB-50 <Network Interface Kit>**

The Network Interface Kit provides a high-speed connection for the Gigabit-per-second interface. Network printing is available with the network protocols such as TCP/IP and NetBUEI for a variety of OS of Windows, Macintosh and UNIX.

#### **(3-6) IB-51 <Wireless Network Interface Kit>**

This is a wireless LAN interface card which supports the wireless LAN specifications IEEE802.11n (Max 300 Mbps) and 11 g/b.

With the utilities supplied, settings are possible for a variety of OS and network protocols.

#### **(3-7) SD/SDHC memory card**

The SD/SDHC memory card is a micro chip card that can be written optional fonts, macros, forms, etc.

The SDHC memory card (maximum 32GB) and the SD memory card is inserted into the memory card slot.

#### **(3-8) IB-36 <Wireless Network Interface Kit>**

This is a wireless LAN interface card which supports the wireless LAN specifications IEEE802.11n (max. 65 Mbps) and 11 g/b.

In addition, network printing is possible without using the wireless LAN router because Wi-Fi Direct is supported.

#### **(3-9) Data Security Kit(E) <Data Security Kit>**

The Data Security Kit overwrites all unnecessary data in the storage area so that it cannot be retrieved. The Data Security Kit encrypts data before storing it in the SSD. It guarantees higher security because no data can be decrypted by ordinary output or operations.

#### **(3-10) UG-33 <ThinPrint Option>**

This application enables print data to print directly without a printer driver.



## 2 Installation

### 2-1 Environment

The operative environmental conditions are as follows:

Temperature:	50 to 90.5°F (10 to 32.5°C) (But humidity should be 70% or less when the temperature is 90.5°F (32.5°C).)
Humidity:	10 to 80% (But the temperature should be 86°F (30°C) or less when humidity is 80%.)

Adverse environmental conditions may affect the image quality. It is recommended to use the machine as follows: Humidity: 36 to 65% Temperature: 60.8 to 80.6°F or less (16 to 27°C)

Avoid the following locations when selecting a site for the machine.

- Avoid locations near a window or with exposure to direct sunlight.
- Avoid locations with vibrations.
- Avoid locations with rapid temperature fluctuations.
- Avoid locations with direct exposure to hot or cold air.
- Avoid poorly ventilated locations.

If the floor is delicate against casters, when this machine is moved after installation, the floor material may be damaged. During operation, some ozone is released, but the amount does not cause any ill effect to one's health. If, however, the machine is used over a long period of time in a poorly ventilated room or when making an extremely large number of printing, the smell may become unpleasant. To maintain the appropriate environment for copy work, it is suggested that the room be properly ventilated.

#### Installation space

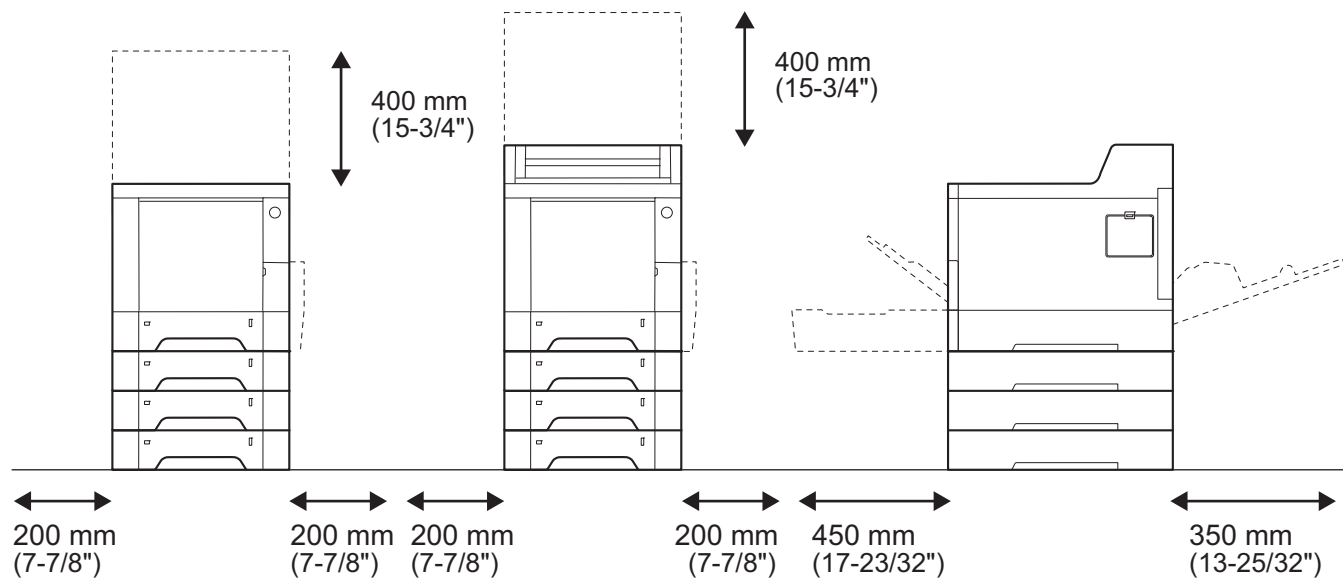
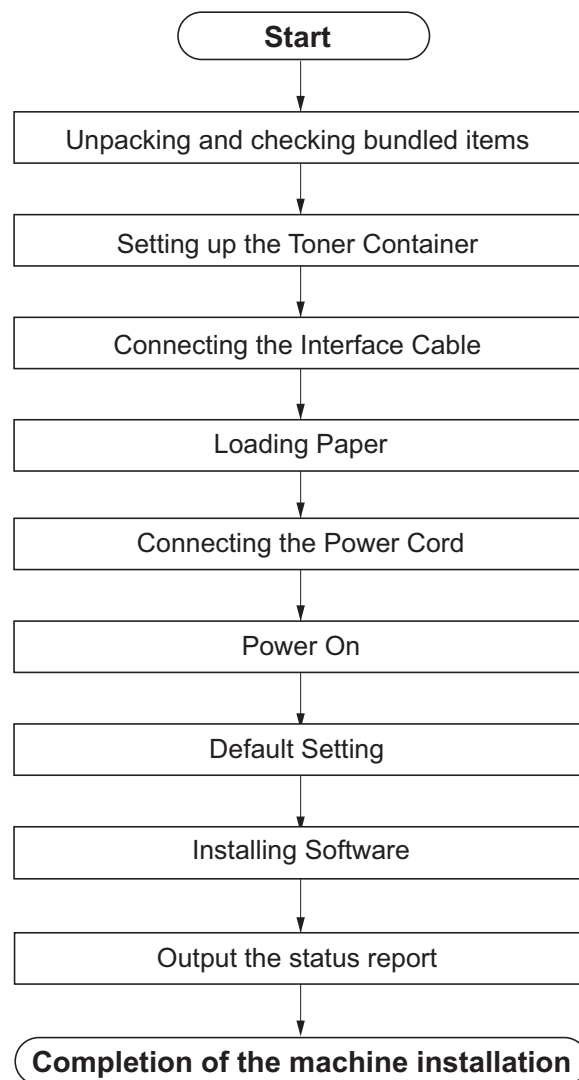


Figure 2-1

## 2-2 Installing the machine

### Installation procedures



## (1) Unpacking and checking bundled items

Take out the machine and accessories from the packing case.  
Remove the tape and cushioning materials for packing from the main unit.

30 ppm model

USA model

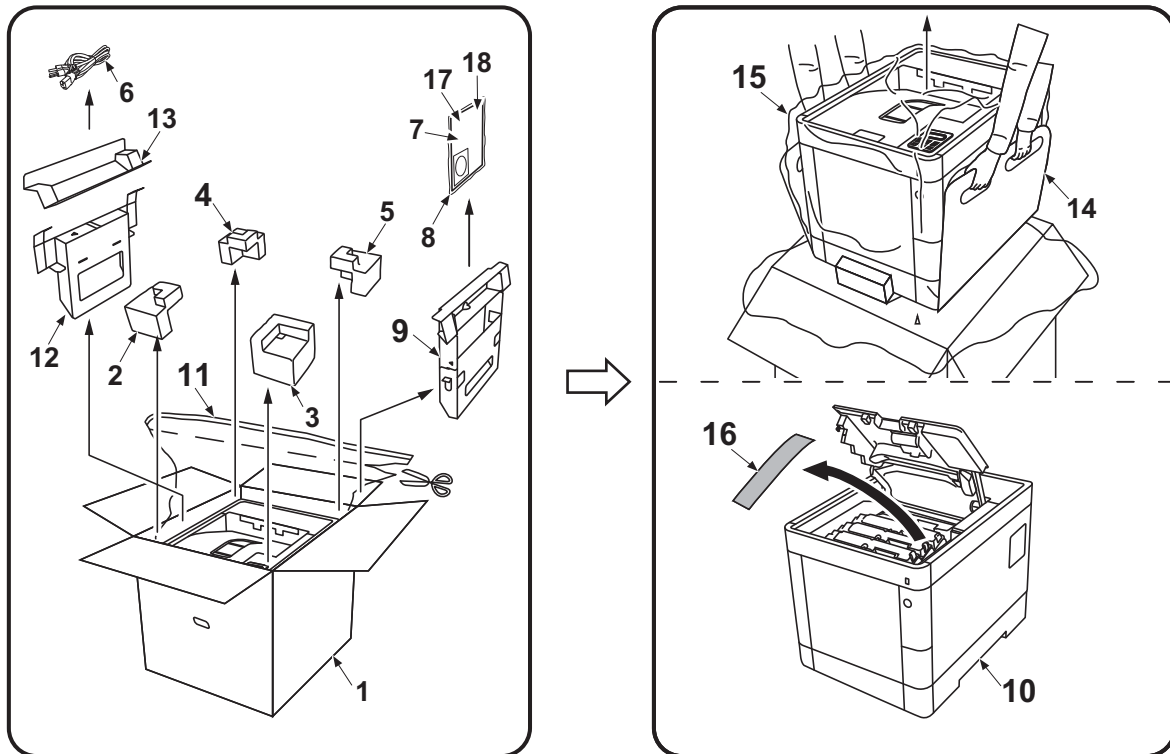


Figure 2-2

- |                          |                                      |                     |
|--------------------------|--------------------------------------|---------------------|
| 1. Outer case            | 8. Plastic bag                       | 14. Bottom pad      |
| 2. Left front upper pad  | 9. Document tray                     | 15. Machine cover   |
| 3. Right front upper pad | 10. Main unit                        | 16. Sheet           |
| 4. Left rear upper pad   | 11. Vacuum plastic bag for main unit | 17. Wi-Fi cover *1  |
| 5. Right rear upper pad  |                                      | 18. Wi-Fi holder *1 |
| 6. Power cord            | 12. Left bottom pad                  |                     |
| 7. Operation guide, etc. | 13. Left upper pad                   |                     |

\*1: 30 ppm model only

### IMPORTANT

Do not throw \*1 away as it will be necessary when installing IB-36.

### IMPORTANT

Make sure to install the main unit on a level surface.

Except USA model

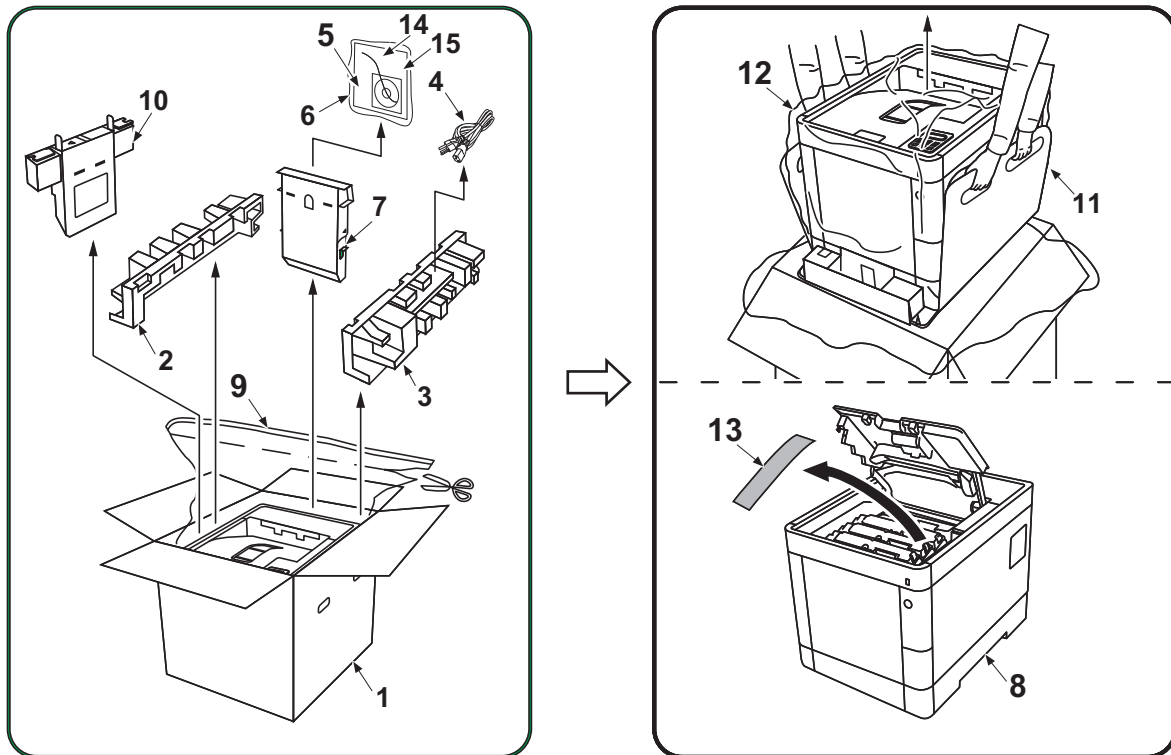


Figure 2-3

- |                          |                                     |                     |
|--------------------------|-------------------------------------|---------------------|
| 1. Outer case            | 7. Document tray                    | 12. Machine cover   |
| 2. Left upper pad        | 8. Main unit                        | 13. Sheet           |
| 3. Right upper pad       | 9. Vacuum plastic bag for main unit | 14. Wi-Fi cover *1  |
| 4. Power cord            | 10. Left bottom pad                 | 15. Wi-Fi holder *1 |
| 5. Operation guide, etc. | 11. Bottom pad                      |                     |
| 6. Plastic bag           |                                     |                     |

\*1: 30 ppm model only

**IMPORTANT**

Do not throw \*1 away as it will be necessary when installing IB-36.

**Note**

Make sure to install the main unit on a level surface.

35/40 ppm model  
USA model

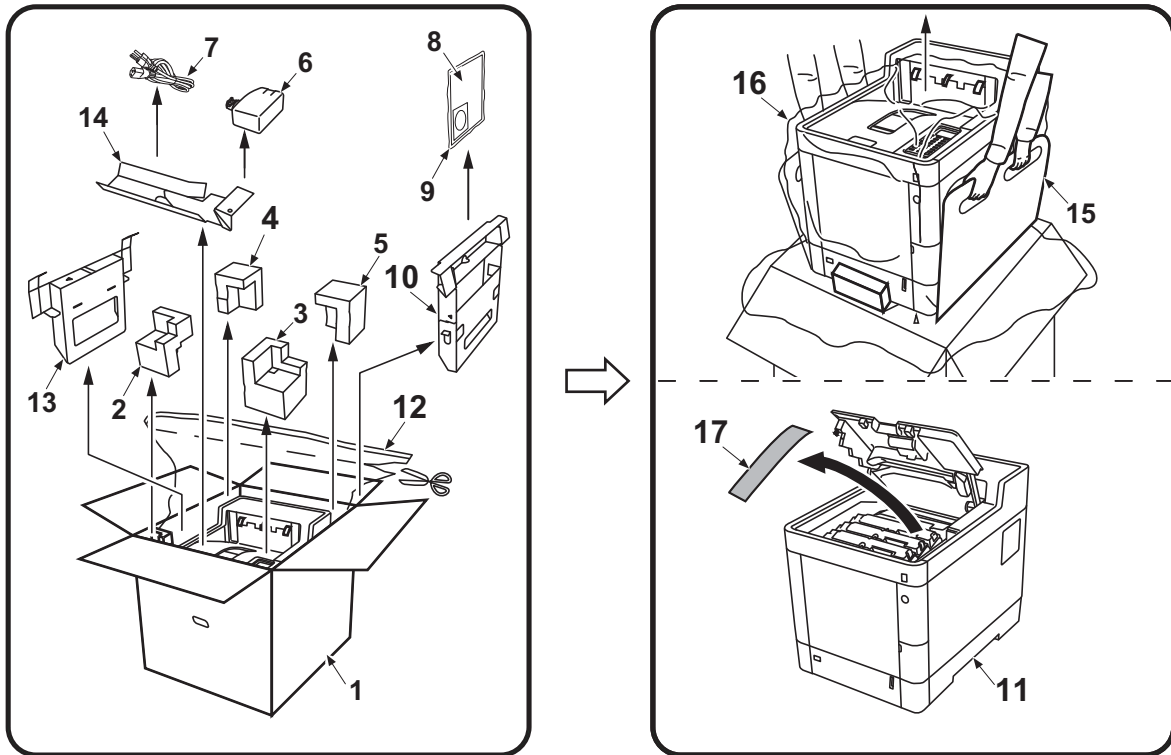


Figure 2-4

- |                          |                                      |                    |
|--------------------------|--------------------------------------|--------------------|
| 1. Outer case            | 8. Operation guide, etc.             | 14. Left upper pad |
| 2. Left front upper pad  | 9. Plastic bag                       | 15. Bottom pad     |
| 3. Right front upper pad | 10. Document tray                    | 16. Machine cover  |
| 4. Left rear upper pad   | 11. Main unit                        | 17. Sheet          |
| 5. Right rear upper pad  | 12. Vacuum plastic bag for main unit |                    |
| 6. Waste toner box       |                                      |                    |
| 7. Power cord            | 13. Left bottom pad                  |                    |

**Note**

Make sure to install the main unit on a level surface.

Except USA model

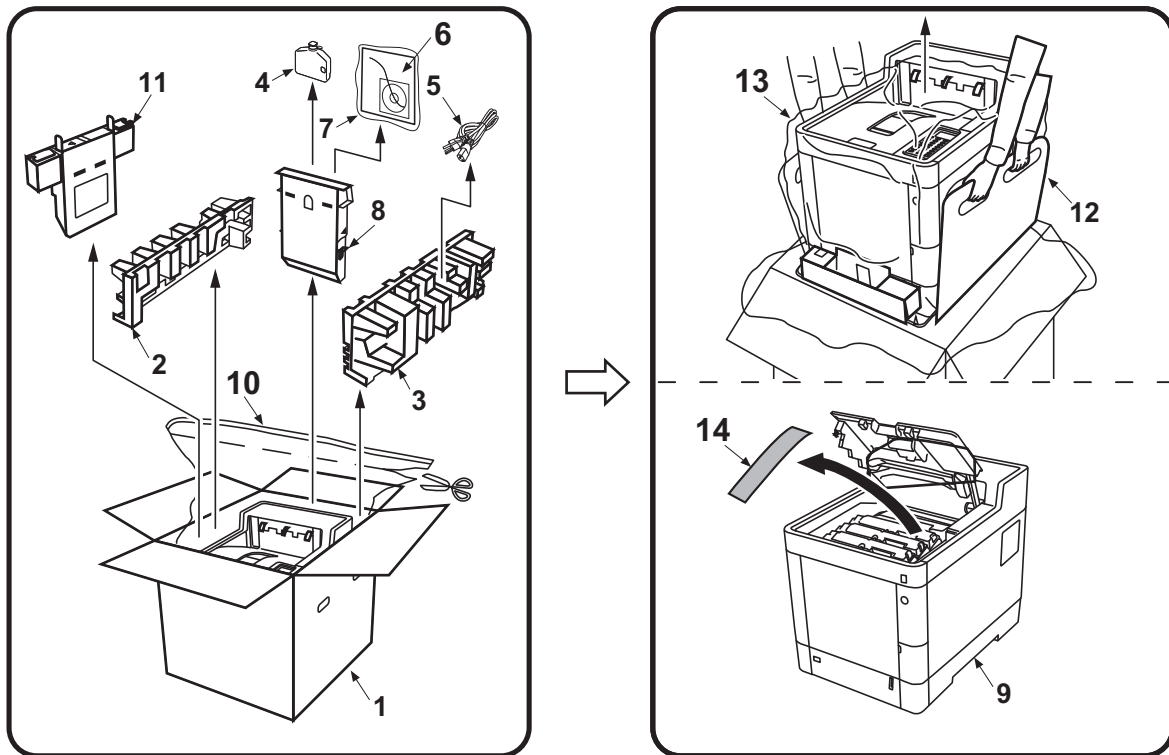


Figure 2-5

- |                          |                                      |                   |
|--------------------------|--------------------------------------|-------------------|
| 1. Outer case            | 7. Plastic bag                       | 12. Bottom pad    |
| 2. Left upper pad        | 8. Document tray                     | 13. Machine cover |
| 3. Right upper pad       | 9. Main unit                         | 14. Sheet         |
| 4. Waste toner box       | 10. Vacuum plastic bag for main unit |                   |
| 5. Power cord            | 11. Left bottom pad                  |                   |
| 6. Operation guide, etc. |                                      |                   |

**Note**

Make sure to install the main unit on a level surface.

### Notes on main unit transportation

When transporting the main unit, lift the left and right handles of the main unit base with two people as shown in the figure.

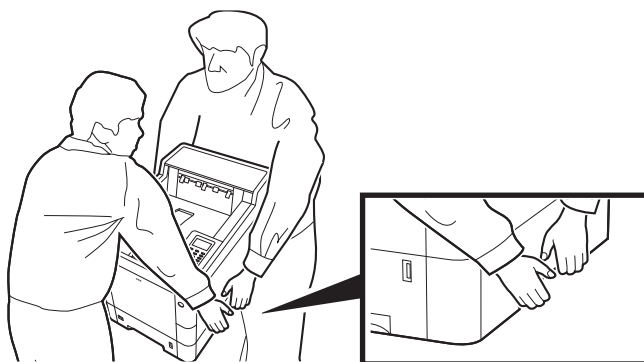


Figure 2-6

### (2) Setting up the Toner Container

Set up the toner container of Y, C, Mand K. The procedures are same for all colors.

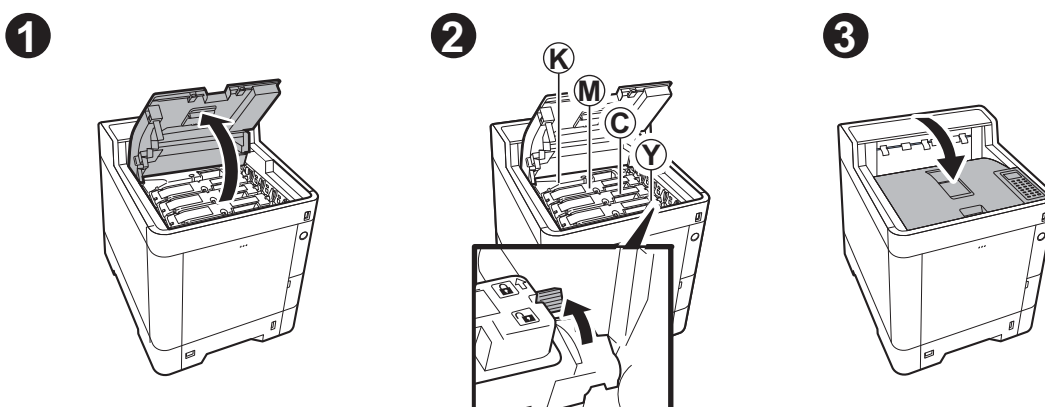


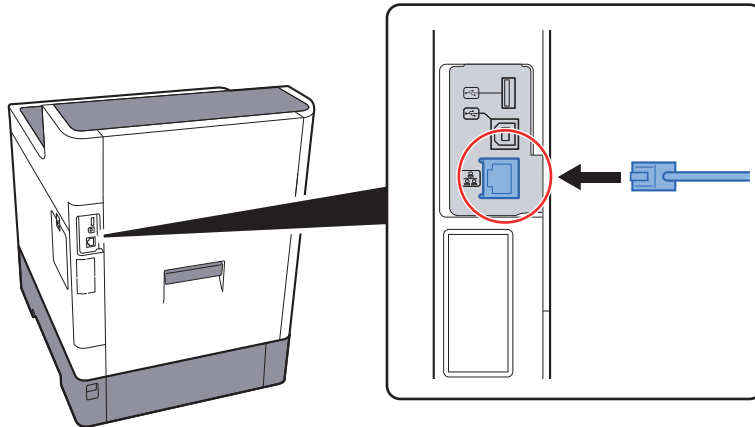
Figure 2-7

### (3) Connecting the Interface Cable

Connection environment	Necessary Cable
Connect a LAN cable to the main unit.	LAN cable (10Base-T, 100Base-TX or1000Base-T)
Connect a USB cable to the main unit.	USB2.0 compatible cable (Hi-Speed USB compliant, Max. 5.0m long)

**In the case of the LAN connection**

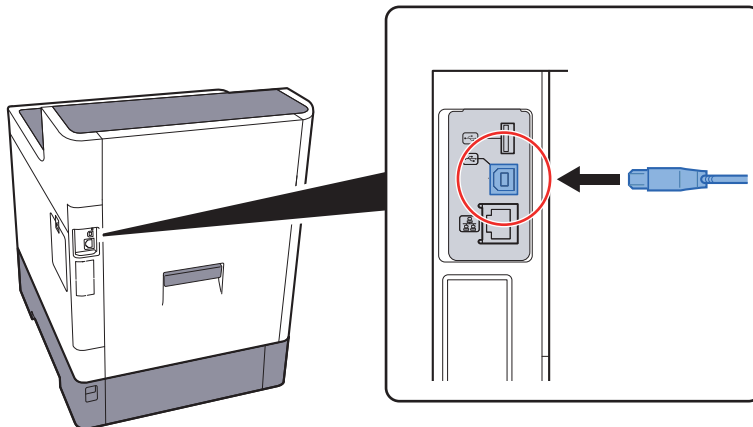
1. Connect the LAN cable to the network interface connector.
2. Connect the other end of the cable to the hub.



**Figure 2-8**

**In the case of the USB connection**

1. Connect the USB cable to the USB interface connector located on the left side of the main unit.
2. Connect the other end of the cable to the PC.



**Figure 2-9**



#### (4) Loading Paper

The cassettes can hold plain paper, recycled paper or color paper.

The number of sheets that can be loaded in each cassette is shown below.

Cassette	No. Sheets
Cassette 1 to 4	500 sheets (80 g/m <sup>2</sup> )

\*: A6 paper cannot be loaded in cassettes 2 to 4.

#### IMPORTANT

Cassette 1 can hold paper with the weight between 60 - 163g/m<sup>2</sup>. Cassettes 2 to 4 can hold paper with the weight between 60 - 220g/m<sup>2</sup>.

1. Pull the cassette completely out of the main unit.

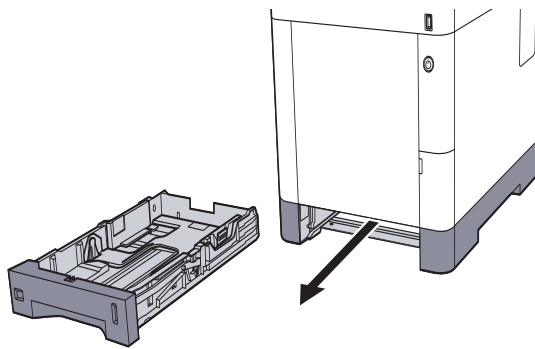


Figure 2-10

#### Note

When pulling the cassette out of the main unit, make sure it is supported and does not fall out.

2. Adjust the paper size of the cassette.
  - 1) Adjust the position of the paper width guides located on the left and right sides of the cassette. Press the paper length tab and slide the guides to the paper size to use. Paper sizes are marked on the cassette.

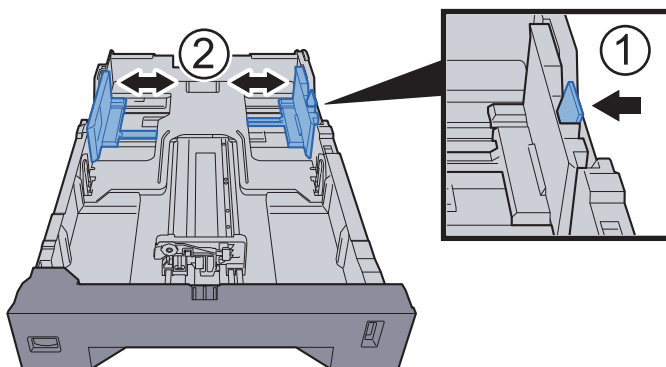


Figure 2-11

2) Adjust the position of the paper length guide. Press the tab and slide the guides to the paper size to use.

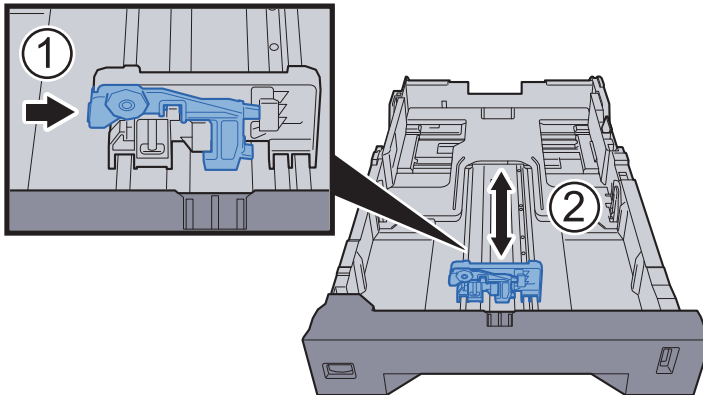


Figure 2-12

3) Turn the size dial so that the paper size to use appears in the paper size window.

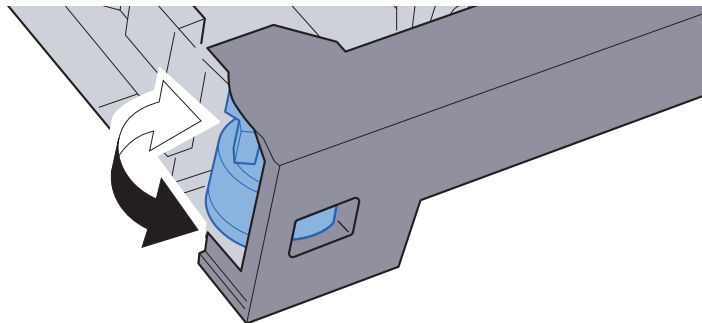


Figure 2-13

3. Load paper.

- 1) Fan the paper, then tap it on a level surface to align the edges. Load the paper in the cassette after aligning its edges.
- 2) Load the paper with the print side facing up.

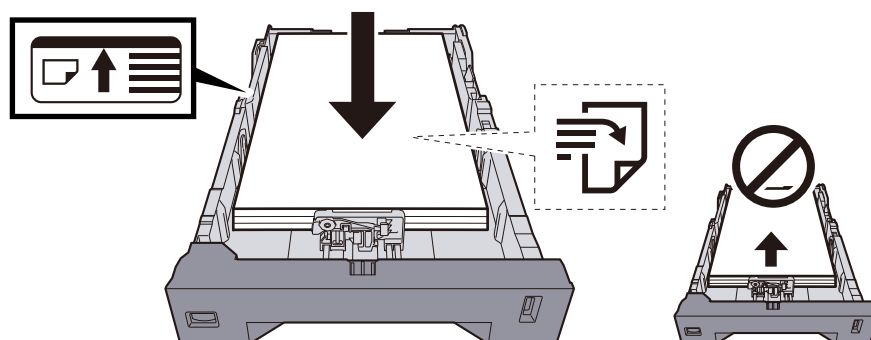


Figure 2-14

**IMPORTANT**

Before loading paper in the cassette, fan the paper taken from a new package to separate it. (See page 11 ???)  
Before loading the paper, be sure that it is not curled or folded. Such paper may cause paper jams.  
Make sure that the loaded paper does not exceed the level indicator (see the illustration above).  
If paper is loaded without adjusting the paper length guide and paper width guides to the paper size to use, the paper may skew or become jammed.

4. Gently insert the cassette all the way into the main unit.

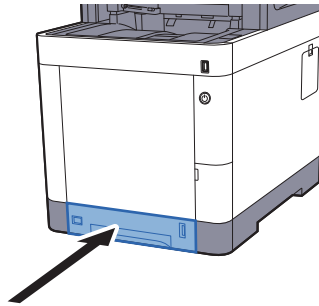


Figure 2-15

### Precaution for Loading Paper

Before loading paper in the cassette or MP tray, treat the paper taken from a new package to separate it in the following steps.

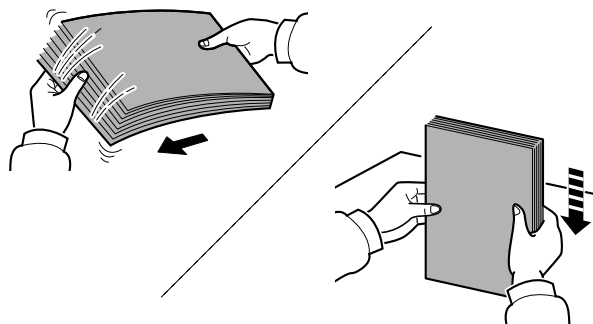


Figure 2-16

Fan the paper, then tap it on a level surface to align the edges.

In addition, note the following points.

If the paper is curled or folded, straighten it before loading. Such paper may cause a jam.

Avoid exposing paper taken from a package to high temperatures and high humidity as dampness can be a cause of problems. Seal any remaining paper after loading in the MP tray or cassettes back in the paper storage bag.

If the machine will not be used for a prolonged period, protect all paper from humidity by removing it from the cassettes and sealing it in the paper storage bag.

### IMPORTANT

If you print onto paper already used for printing, do not use it with a staple or clip. This may cause poor image quality or malfunctions.

## (5) Connecting the Power Cord

1. Connect one end of the supplied power cord to the main unit and the other end to a power outlet.

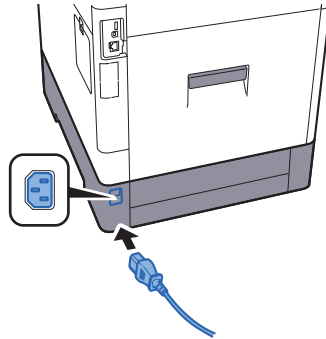


Figure 2-17

### IMPORTANT

Only use the power cord that comes with the main unit.

## (6) Turn the power on.

1. Turn the power switch on.

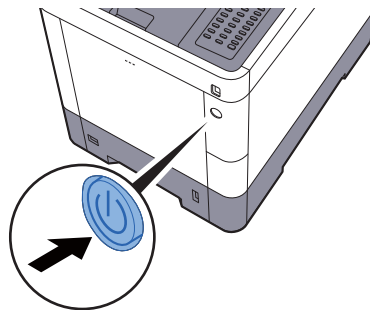


Figure 2-18

### Note

After turning off the power switch, do not turn on the power switch again immediately. Wait 5 seconds or more, and then turn on the power switch.

## (7) Default Setting (for 30 ppm model)

### (7-1) Setting Date and Time

Follow the steps below to set the local date and time at the place of installation.

#### Note

The factory default login user name and login password are set as shown below.

Login User Name (30ppm model): 3000

\*: Be sure to set the time difference before setting the date and time.

The correct time can be periodically set by obtaining the time from the network time server.

#### 1. Display the screen.

1.[Menu] key > [▲] [▼] key > [Device Common] > [▶] key > [▲] [▼] key > [Date Setting] > [▶] key

2.Enter the administrator ID and select the [OK] key.

\* :Enter an ID consisting of between 1 and 16 numbers.

Select the [▲] or [▼] key to enter a number.

Select the [◀] or [▶] key to move the cursor left or right.

3.Enter the administrator password and select the [OK] key.

\* : Enter a password consisting of between 0 (no settings) and 16 numbers.

Select the [▲] or [▼] key to enter a number.

Select the [◀] or [▶] key to move the cursor left or right.

\* :After inputting the ID and the password, verification is performed. If you enter the incorrect administrator ID or password, the message "Wrong ID" or "Wrong Password" appears and the input screen then reappears. Re-enter the ID or password correctly.

#### 2. Configure the settings.

[▲] [▼] key > [Time Zone] > [OK] key > Select the time zone > [OK] key > [▲] [▼] key >

[Date (Year/Mon/Day)] > [OK] key > Set the date > [OK] key > [▲] [▼] key >

[Time (Hour:Min:Sec)] > [▲] [▼] key > Set the time > [OK] key > [▲] [▼] key > [Date Format] >

[OK] key > Select the Date Format > [OK] key

Item	Descriptions
Time Zone	Set the time difference from GMT. Choose the nearest listed location from the list. If you select a region that utilizes summer time, configure settings for summer time.
Date (Year/Mon/Day)	Set the date for the location where you use the machine. Value: Year (2000 to 2037), Month (1 to 12), Day (1 to 31)
Time (Hour:Min:Sec)	Set the time for the location where you use the machine. Value: Hour (00 to 23), Minute(00 to 59), Second (00 to 59)
Date Format	Select the display format of year, month, and date. The year is displayed in Westernnotation. Value: month/day/year, day/month/year, year/month/day

\*: Select the [▲] or [▼] key to enter a number.

Select the [◀] or [▶] key to move the position being entered, which is shown highlighted.

## (7-2) Network Setup (LAN Cable Connection)

### TCP/IP (IPv4) Settings

Set up TCP/IP (IPv4) to connect to the Windows network.

1. Display the screen.

[Menu] key > [▲] [?] key > [Wired Network] > [▶] key > [▲] [?] key > [TCP/IP] > [OK] key

2. Configure the settings.

When setting the static IP address

1. [▲] [▼] key > [On] > [OK] key
2. Select [▶] key while "TCP/IP On" is displayed.
3. [▲] [▼] key > [DHCP] > [OK] key > [▲] [▼] key > [Off] > [OK] key
4. [▲] [▼] key > [IP Address] > [OK] key
5. Set the IP address.
  - \* :You can set any value between 000 and 255.  
Select the [▲] or [▼] key to enter a number.  
Select the [◀] or [▶] key to move the cursor left or right.
6. Select the [OK] key.
7. [▲] [▼] key > [Subnet Mask] > [OK] key
8. Set the subnet mask.
  - \* :You can set any value between 000 and 255.  
Select the [▲] or [▼] key to enter a number.  
Select the [◀] or [▶] key to move the cursor left or right.
9. Select the [OK] key.
10. [▲] [▼] key > [Default Gateway] > [OK] key
11. Set the default gateway.
  - \* :You can set any value between 000 and 255.  
Select the [▲] or [▼] key to enter a number.  
Select the [◀] or [▶] key to move the cursor left or right.
12. Select the [OK] key.
13. [▲] [▼] key > [Auto-IP] > [OK] key
14. [Off] > [OK] key

### IMPORTANT

After changing the setting, restart the network from the System Menu, or turn the power off and then on.

## (7-3) Altitude Adjustment Setting

Execute [Altitude Adjustment] from the System Menu when setting up at a high altitude place.

When the printing quality declines in the environment of an altitude higher than 1001m sea level, the setting of [Altitude Adjustment] mode can recover the printing quality.

1. Press [Menu] key.
2. Select [Adjustment/Maintenance] using the [▲] [▼] key, then press the [OK] key.
3. Select [Service Setting] using the [▲] [▼] key, then press the [OK] key.
4. Select [Altitude Adjustment] using the [▲] [▼] key, then press the [OK] key.
5. Select [Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m] using the [▲] [▼] key, then press the [OK] key.

\*: Description of setting

Normal: Altitude from 0 to 1000m

## (8) Default Setting (for 35/40 ppm model)

### (8-1) Setting Date and Time

Follow the steps below to set the local date and time at the place of installation.

#### Note

The factory default login user name and login password are set as shown below.

Login User Name (35ppm model): 3500

Login User Name (40ppm model): 4000

Be sure to set the time difference before setting the date and time.

The correct time can be periodically set by obtaining the time from the network time server.

1. Display the screen.

[Menu] key > [▲] [▼] key > [Common Settings] > [OK] key > [▲] [▼] key > [Date Setting]  
[OK] key

Configure the settings.

[▲] [▼] key > [Time Zone] > [OK] key > Select the time zone > [OK] key > [▲] [▼] key > [Date] > [OK] key > Set the date  
> [OK] key > [▲] [▼] key > [Time] > [OK] key > Set the time > [OK] key > [▲] [▼] key > [Date Format] > [OK] key >  
Select the Date Format > [OK] key

Item	Descriptions
Time Zone	Set the time difference from GMT. Choose the nearest listed location from the list. If you select a region that utilizes summer time, configure settings for summer time.
Date (Year/Mon/Day)	Set the date for the location where you use the machine. Value: Year (2000 to 2037), Month (1 to 12), Day (1 to 31)
Time (Hour:Min:Sec)	Set the time for the location where you use the machine. Value: Hour (00 to 23), Minute(00 to 59), Second (00 to 59)
Date Format	Select the display format of year, month, and date. The year is displayed in Westernnotation. Value: month/day/year, day/month/year, year/month/day

\*: Select the [▲] or [▼] key to enter a number.

Select the [◀] or [▶] key to move the position being entered, which is shown highlighted.

### (8-2) Network Setup (LAN Cable Connection)

#### TCP/IP (IPv4) Settings

Set up TCP/IP (IPv4) to connect to the Windows network.

1. Display the screen.

[Menu] key > [▲] [▼] key > [Network] > [OK] key > [▲] [▼] key >  
[Wired Netwk. Set] > [OK] key > [▲] [▼] key > [TCP/IP Settings] > [OK] key >  
[▲] [▼] key > [IPv4 Setting] > [OK] key

2. Configure the settings.

When setting the static IP address

1. [▲] [▼] key > [DHCP] > [OK] key > [▲] [▼] key > [Off] > [OK] key
2. [▲] [▼] key > [IP Address] > [OK] key
3. Set the IP address.

- \* :You can set any value between 000 and 255.  
Use the numeric keys or select the [▲] or [▼] key to enter a number.  
Select the [◀] or [▶] key to move the position being entered, which is shown highlighted.
- 4. Select the [OK] key.
- 5. [▲] [▼] key > [Subnet Mask] > [OK] key
- 6. Set the subnet mask.
  - \* :You can set any value between 000 and 255.  
Use the numeric keys or select the [▲] or [▼] key to enter a number.  
Select the [◀] or [▶] key to move the position being entered, which is shown highlighted.
- 7. Select the [OK] key.
- 8. [▲] [▼] key > [Default Gateway] > [OK] key
- 9. Set the default gateway.
  - \* :You can set any value between 000 and 255.  
Use the numeric keys or select the [▲] or [▼] key to enter a number.  
Select the [◀] or [▶] key to move the position being entered, which is shown highlighted.
- 10. Select the [OK] key.
- 11. [▲] [▼] key > [Auto-IP] > [OK] key
- 12. [Off] > [OK] key

#### **IMPORTANT**

After changing the setting, restart the network from the System Menu, or turn the power off and then on.

### **(8-3) Altitude Adjustment Setting**

Execute [Altitude Adjustment] from the System Menu when setting up at a high altitude place.

When the printing quality declines in the environment of an altitude higher than 1001m sea level, the setting of [Altitude Adjustment] mode can recover the printing quality.

1. Press [Menu] key.
2. Select [Adjustment/Maintenance] using the [▲] [▼] key, then press the [OK] key.
3. Select [Service Setting] using the [▲] [▼] key, then press the [OK] key.
4. Select [Altitude Adjustment] using the [▲] [▼] key, then press the [OK] key.
5. Select [Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m] using the [▲] [▼] key, then press the [OK] key.

\*: Description of setting

Normal: Altitude from 0 to 1000m



## **(9) Installing Software**

1. Install appropriate software on your PC from the included DVD (Product Library) if you want to use the printer function of this machine. See the Operation Guide supplied with the main unit.

## (10)Output of Status Page

### 30 ppm model

1. Press [Menu] key.

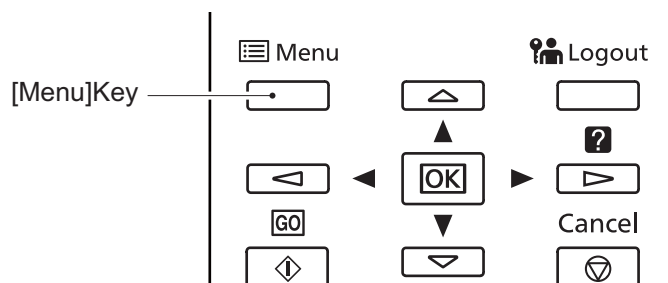


Figure 2-19

2. Select [Report Print], then press the [OK] key.
3. Select [Status Page], then press the [OK] key.



Figure 2-20

4. [?] is additionally displayed. Therefore, press [OK] key.

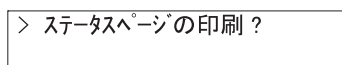
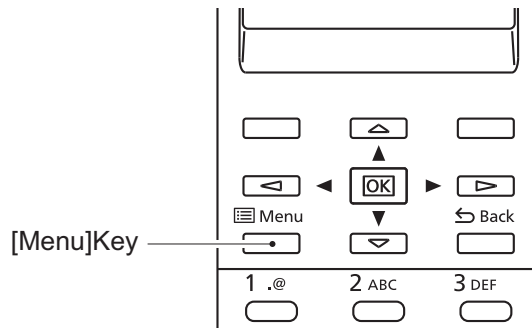


Figure 2-21

Status page will be printed.

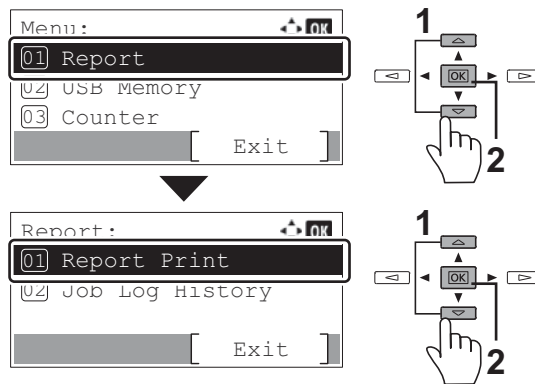
**35/40 ppm model**

1. Press [Menu] key.



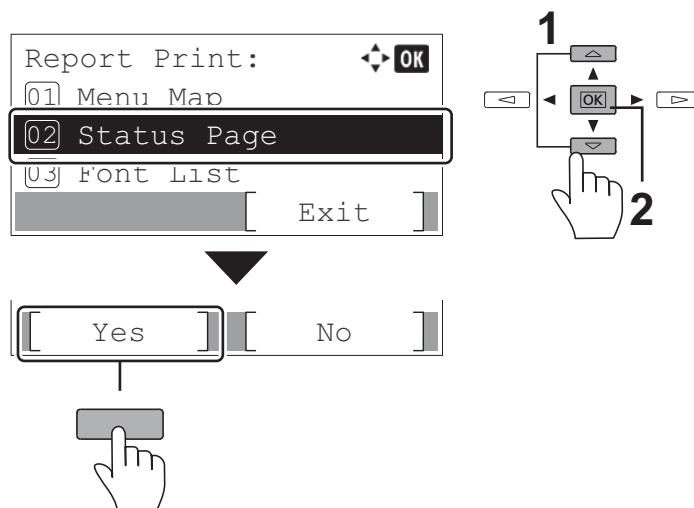
**Figure 2-22**

2. Select [Report], then press the [OK] key.
3. Select [Report Print], then press the [OK] key.



**Figure 2-23**

4. Select [Status Page], then press the [OK] key.
5. After the message "This will be printed. Are you sure?" appears, press [Yes].



**Figure 2-24**

6. Status page will be printed.

### (11) Completion of installing the main unit (Turning the power off)

1. Turn the power switch off.

\*: It takes about 3 minutes for power off.

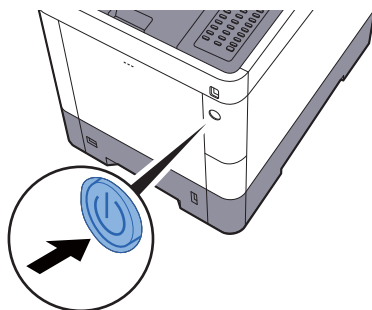


Figure 2-25

## 2-3 Installing the optional equipment

### (1) Card Authentication Kit(B)

User login administration is available using ID cards. To do so, it is necessary to register ID card information on the previously registered local user list. Refer to the Card Authentication Kit Operation Guide for more information about registration.

#### Activating Card Authentication Kit

#### IMPORTANT

To install the optional function, you need the License Key. Please access the designated website of your dealer or service representative, and register the "Machine No." indicated on your machine and the "Product ID" indicated on the License Certificate supplied with the product to issue the License Key.

- \*: When the machine enters Energy Saver sleep mode, the ID card cannot be recognized. If you want to use the card reader during the sleep mode, set [Off] in "Sleep Rules" of [Sleep Level] by referring to the operation guide.
- \*: When the optional network interface kit is equipped, the setting is unnecessary.

## (2) Paper Feeder (500-sheet x1)

Three cassettes the same as the one for the main unit can be installed. Installation is the same as the standard cassette.

### Installing the Paper Feeder

1. Take out the paper feeder (a) from the packing case, and place it at the installation location.
2. Lift the main unit straight up, and then fit it on the paper feeder while inserting the positioning pins (b) into the positioning holes at the main unit bottom.

Maximum number to install: three

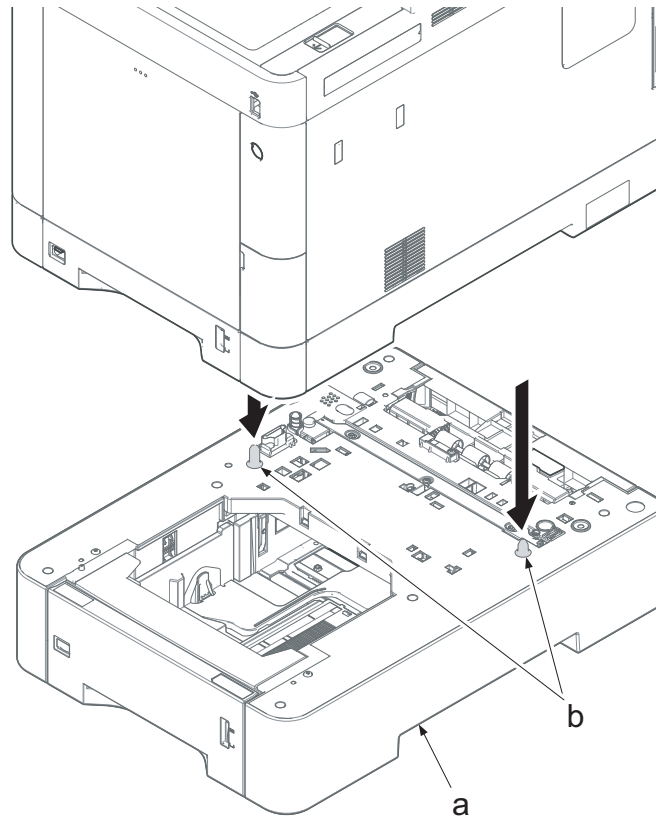


Figure 2-26

3. Pull out the cassette (b) from the paper feeder (a).

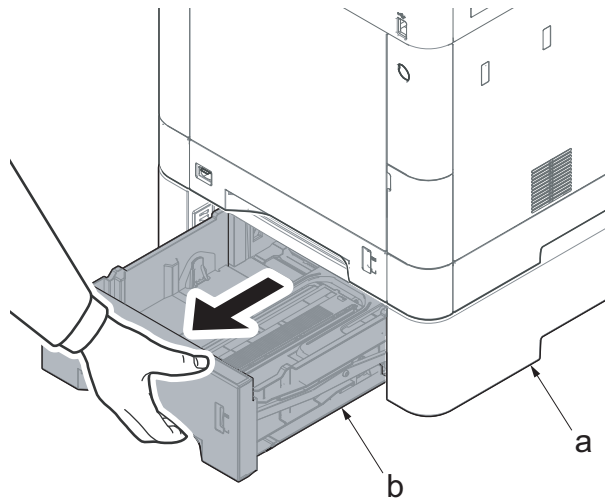


Figure 2-27

4. Adjust the position of the paper width guides located on the left and right sides of the cassette. Press the tab and slide the guides to the paper size to use.  
\*: Paper sizes are marked on the cassette.

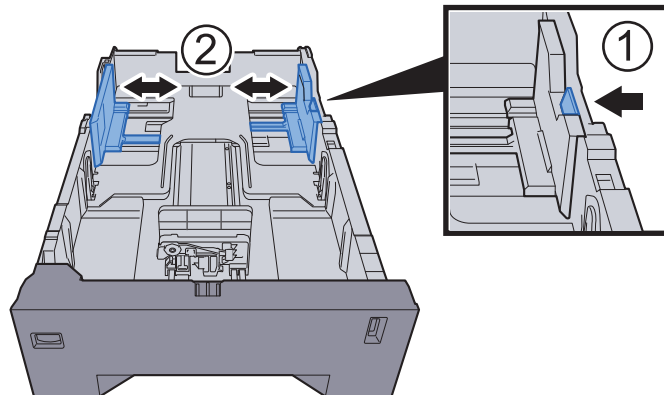


Figure 2-28

5. Adjust the position of the paper length guide. Press the tab and slide the guides to the paper size to use.

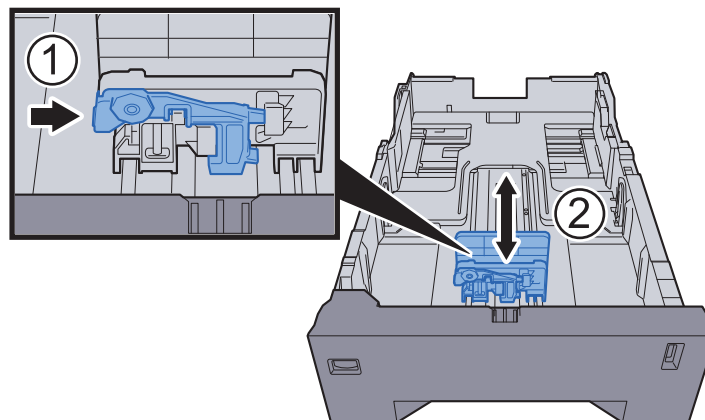


Figure 2-29

6. Turn the size dial so that the paper size to use appears in the paper size window.

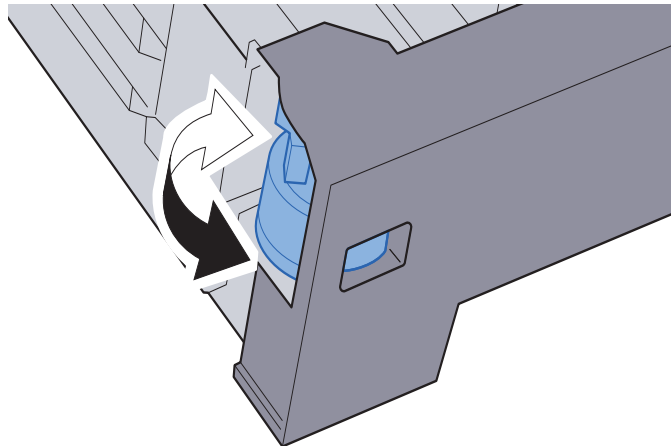


Figure 2-30

7. Fan the paper taken from a package to separate it, and then tap it on a level surface to align the edges.

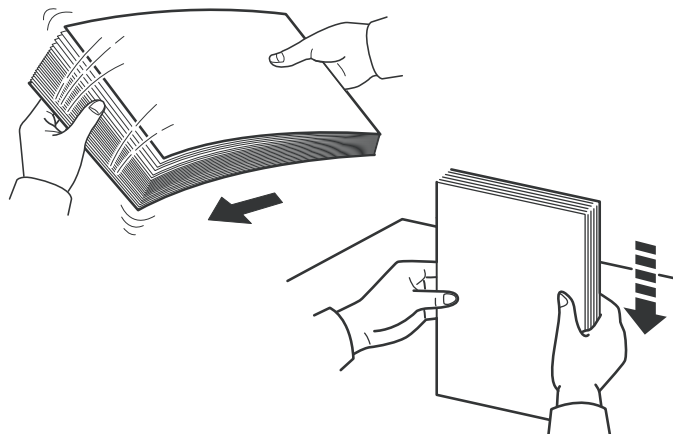


Figure 2-31

8. Load the paper with the print side facing up.

\*: Make sure that the loaded paper does not exceed the level indicator (see the illustration above).

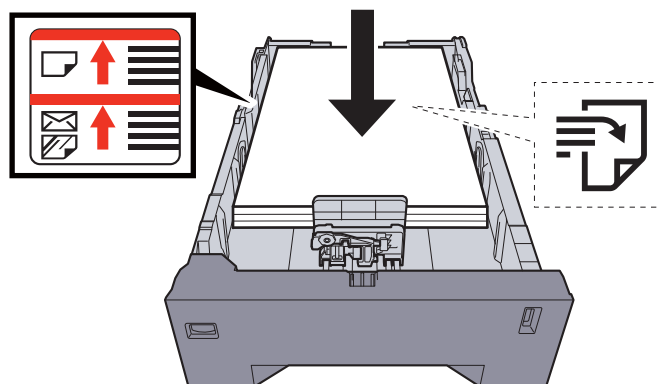


Figure 2-32



9. Push the cassette (b) back in the paper feeder (a).

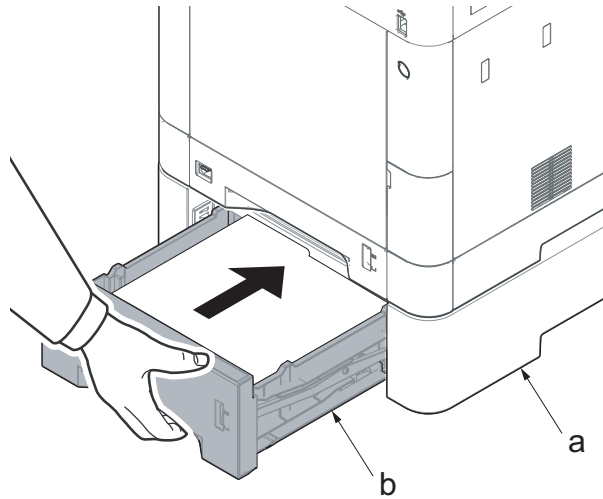


Figure 2-33

### (3) Memory Module

The machine can perform more multiple jobs simultaneously by adding more memory. You can increase the machine's memory up to 3,072 MB by plugging in the optional memory modules (2,048 MB). (35/40 ppm model only)

#### Precautions for Handling the Memory Modules

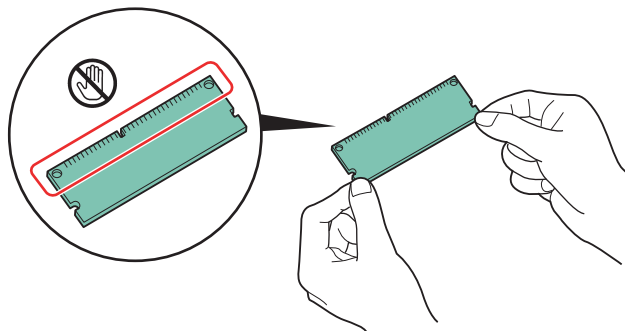


Figure 2-34

To protect electronic parts, discharge static electricity from your body by touching a water pipe (faucet) or other large metal object before handling the memory modules. Or, wear an antistatic wrist strap, if possible, when you install the memory modules.

#### Installing the Memory Modules

1. Turn off the main unit and disconnect the power cord and all interface cables.  
\*: Remove the optional board IB-50/51, HD-6/7, if installed.
2. Press the power switch one second or more to discharge the electric charge inside the main unit.  
\*: Otherwise, The PWB may be damaged.

3. Remove the cover.

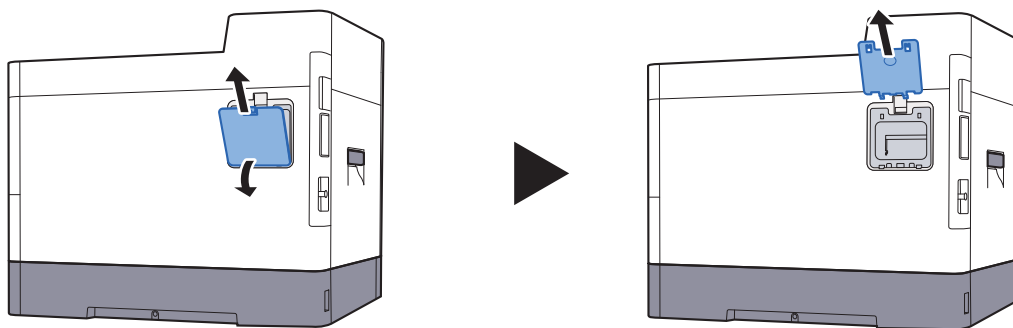


Figure 2-35

4. Remove the memory module from its package.

5. With the memory connection terminal pointing toward the socket, align the cut-out part with the socket terminal and insert it straight in on an angle.

\*: Before inserting the memory module, make sure that the power switch is turned off.

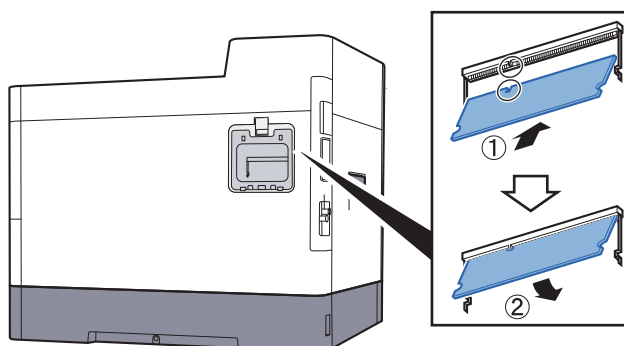


Figure 2-36

6. Carefully press the inserted memory module toward the main unit.

7. Reattach the covers.

### Removing the Memory Module

To remove the memory module, remove the right cover and the memory slot cover from the main unit. Then, carefully push the two stoppers so that the memory module pops up from the socket.

### IMPORTANT

When detaching the memory, unlock both sides of the memory.  
(Memory comes off if releasing the stoppers at the both sides of memory)

### Verifying the Memory Module

To verify that the memory module is working properly, print out a status page and check its content.

## (4) HD-6/HD-7 (SSD)

With an SSD installed in the main unit, received print data can be rasterized and stored in the SSD. This enables high-speed printing of multiple copies using the electronic sort function. Also, you can use the Document Box functions. See "Document Box" in the Operation Guide supplied with the main unit for details.

**(5) IB-50 (Network Interface Kit)**

The Network Interface Kit provides a high-speed connection for the Gigabit-per-second interface. Network printing is available with the network protocols such as TCP/IP and NetBUEI for a variety of OS of Windows, Macintosh and UNIX. See the Operation Guide supplied with the IB-50 for details.

The installation procedures are same as for an SSD.

**(6) IB-51 (Wireless Network Interface Kit)**

This is a wireless LAN interface card which supports the wireless LAN specifications IEEE802.11n (Max 300 Mbps) and 11 g/b.

With the utilities supplied, settings are possible for a variety of OS and network protocols. See the Operation Guide supplied with the IB-51 for details.

The installation procedures are same as for an SSD.

## Installing the SSD/IB-50/IB-51

1. Turn the power switch off and unplug the power cord from the outlet.
  2. Press the power switch one second or more to discharge the electric charge inside the main unit.
- \*: Otherwise, The PWB may be damaged.

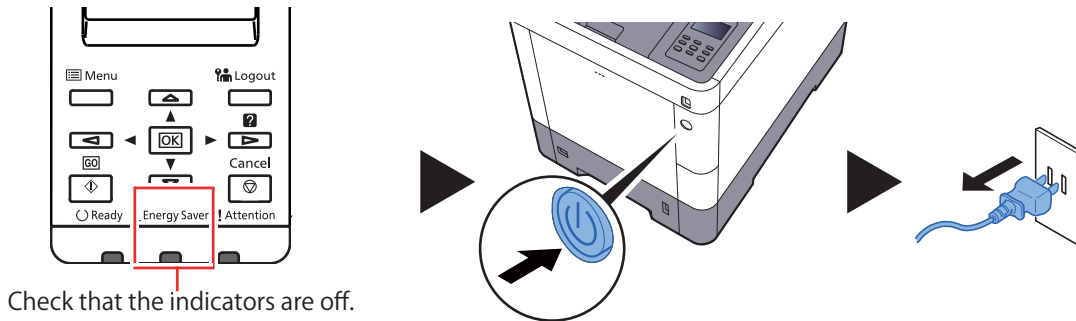


Figure 2-37

3. Remove the interface cover.

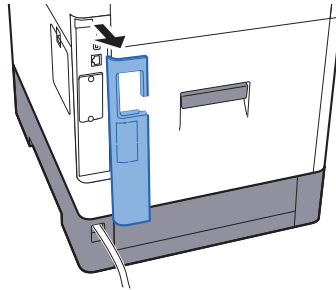


Figure 2-38

4. Remove two screws (M3x8) and remove the cover.

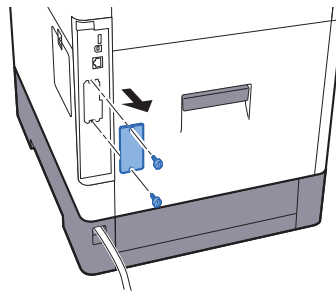


Figure 2-39

5. Insert it straight into the optional interface slot.

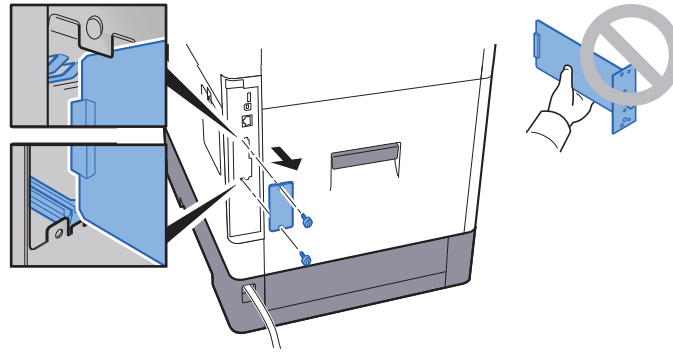


Figure 2-40

6. Remove the breakaway cover from the interface cover. Reattach the interface cover to its original position.

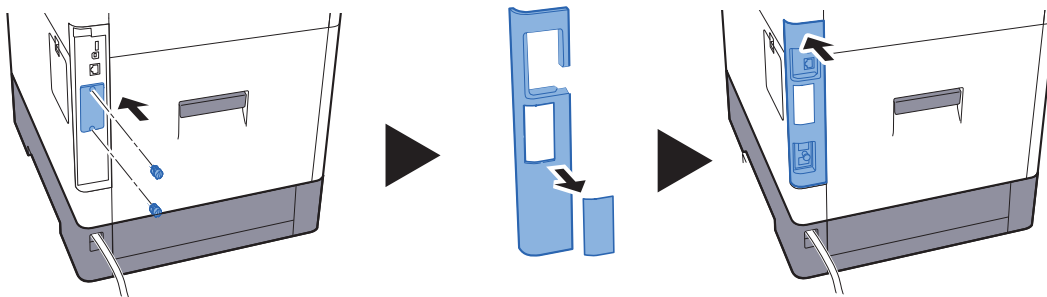


Figure 2-41

7. Insert the power cord into the outlet and turn the power switch on.

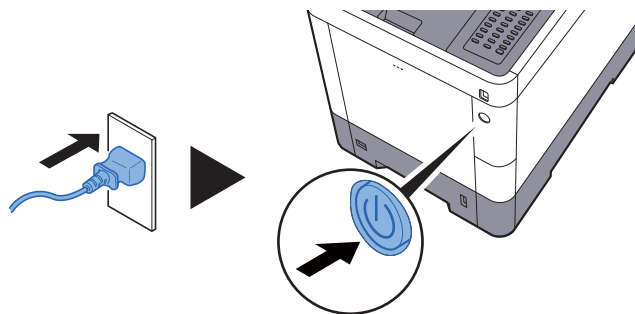


Figure 2-42

8. Format the SSD from the operation panel.

### Formatting an SSD

#### 30 ppm model

1. [Menu] key > [▲] [▼] key > [Device Common] > [▶] key > [▲] [▼] key > [SSD] > [▶] key
2. Format an optional SSD.

#### 35/40 ppm model

1. [Menu] key > [▲] [▼] key > [Common Settings] > [OK] key > [▲] [▼] key > [Format SSD] > [OK] key
2. Format an optional SSD.

\*: When an optional SSD is inserted into the main unit for the first time, it must be formatted before use.

### IMPORTANT

Formatting will delete all existing data on an SSD.

## (7) SD/SDHC Card

An SD/SDHC card is useful for storing fonts, macros, and overlays. The main unit is equipped with a slot for an SDHC card with a maximum size of 32GB, and an SD card with a maximum size of 2GB.

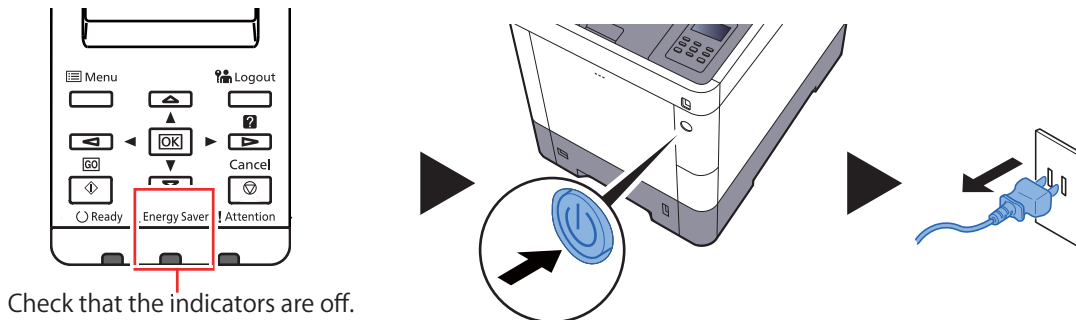
### Reading the SD/SDHC Card

The contents of the SD/SDHC card are read into the main unit after turning the power on.

### Formatting an SD/SDHC Card

To use an unused SD/SDHC card, you must first format it with the main unit.

1. Turn the power switch off and unplug the power cord from the outlet.



Check that the indicators are off.

Figure 2-43

2. Remove the interface cover.

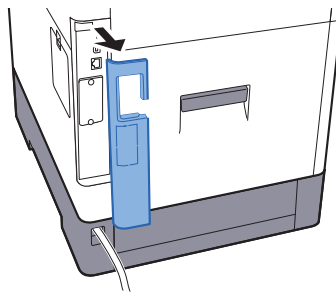


Figure 2-44

3. Remove two screws and remove the cover.

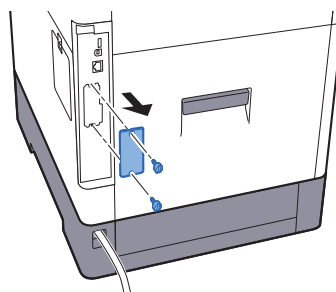


Figure 2-45

4. Insert the SD/SDHC card into the SD/SDHC card slot.

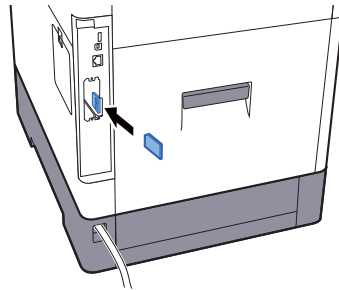


Figure 2-46

5. Reattach the interface cover to its original position.

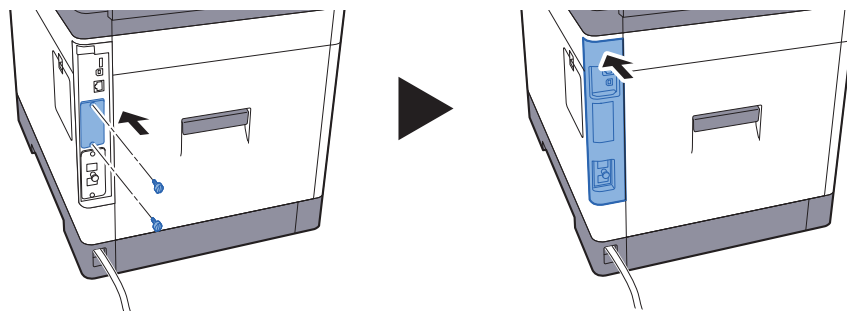


Figure 2-47

6. Insert the power cord into the outlet and turn the power switch on.

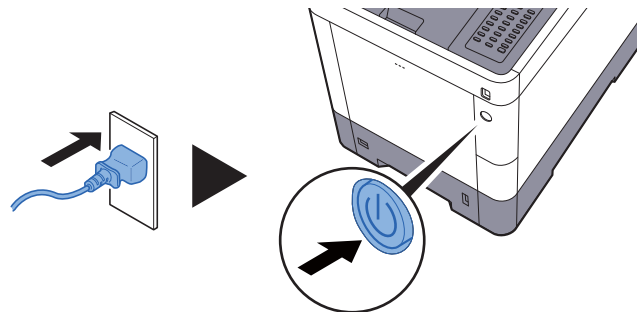


Figure 2-48

7. Format the SD/SDHC card from the operation panel.

#### Formatting an SD/SDHC Card

##### 30 ppm model

1. [Menu] key > [▲] [▼] key > [Device Common] > [▶] key > [▲] [▼] key > [SD Card] > [▶] key
2. Format an optional SD card.

##### 35/40 ppm model

1. [Menu] key > [▲] [▼] key > [Common Settings] > [OK] key > [▲] [▼] key > [Format SD Card] > [OK] key  
????????????
2. Format an optional SD card.

\*: A new SD card must be formatted with the main unit before use.

#### IMPORTANT

Formatting will delete all existing data on the SD card.

If you have installed an application, do not format the SD card to avoid the removal of the application in the SD card.

## (8) IB-36 (Wireless Network Interface Kit)

Supplied parts of IB-36 (Wireless Network Interface Kit)  
(1503S50UN0)  
PWB UNIT 1pc

PWB holder\*1 1PC  
PWB cover\*1 1PC

\*1: Bundled in the main unit (30 ppm model)

### IMPORTANT

Before attaching the expansion memory, make sure to do the following procedure.

Otherwise, there might be the possibility to damage the PWB.

1. Unplug the power cord.
2. Press the power switch one second or more to discharge the electric charge inside the main unit.

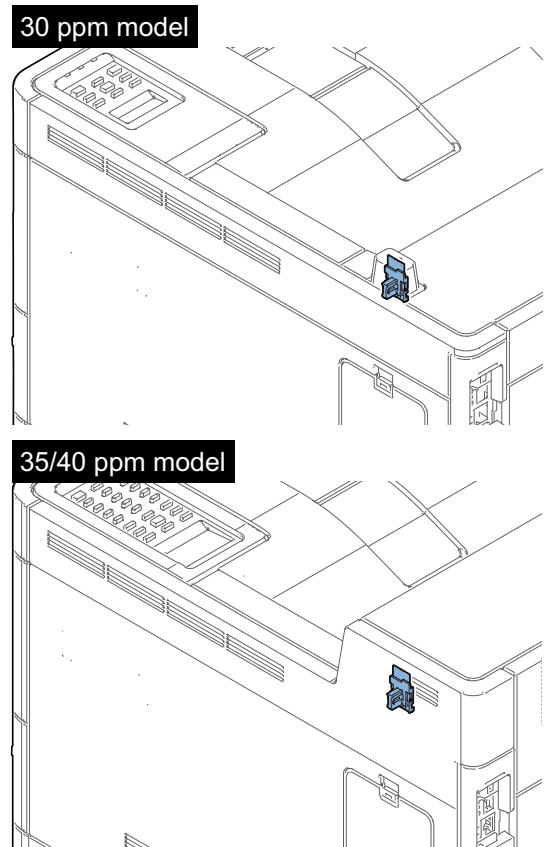


Figure 1-2-1

30 ppm model

1. Remove Wi-Fi PWB (b) by removing one screw (a) from the PWB unit.
2. Insert the boss (d) of the PWB holder (c) which is bundled in the machine box in the screw hole of Wi-Fi PWB (b) and fix with 2 position of hooks (f).

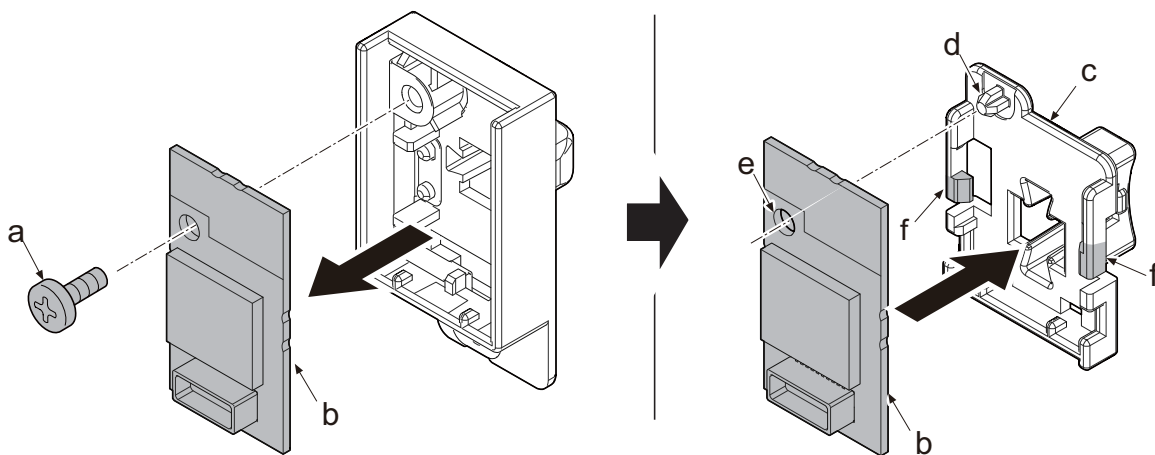
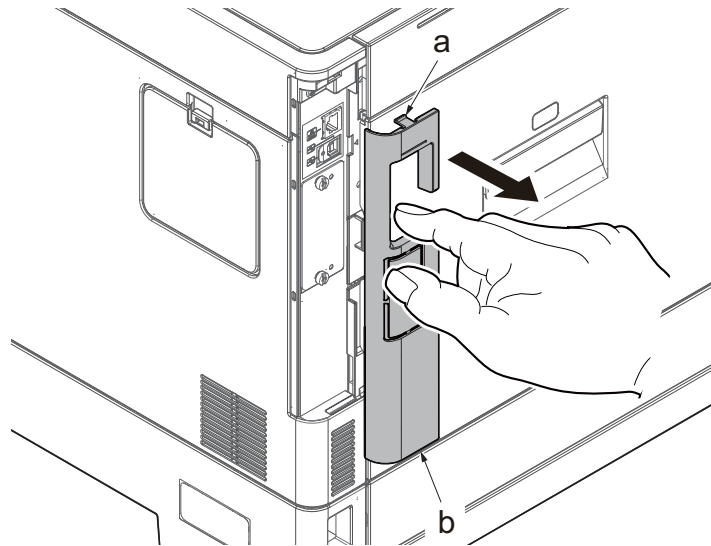


Figure 2-3

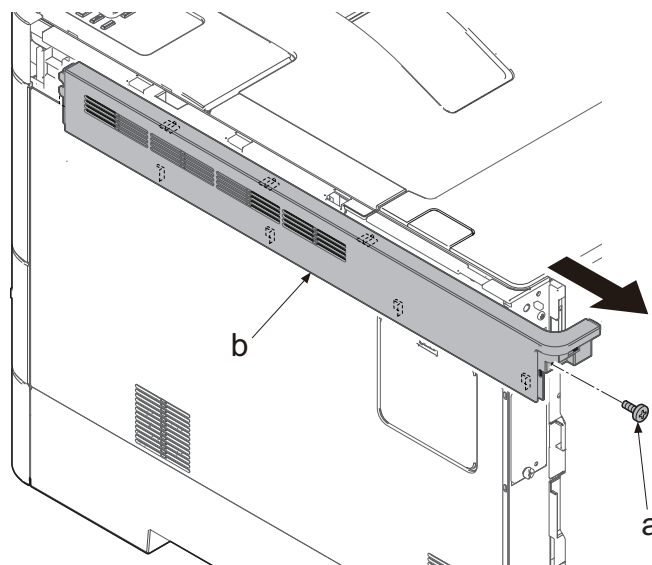


3. Pull the lower part of the opening toward the machine rear side and release the hook (a).
4. Remove the interface cover (b).



**Figure 2-4**

5. Remove the screw (a)(M3x8).
6. Slide the upper right cover (b) toward the machine rear side and detach it.



**Figure 2-5**

7. Slide the lid (a) and remove it.

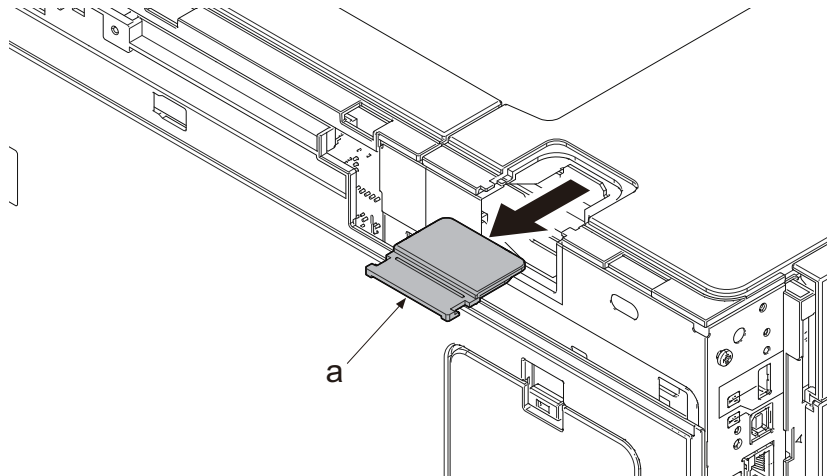


Figure 2-6

8. Insert the PWB unit (a) to the opening section (b) of the shield box.  
9. Connect the connector (c) from the connector (d) of the main/engine PWB.

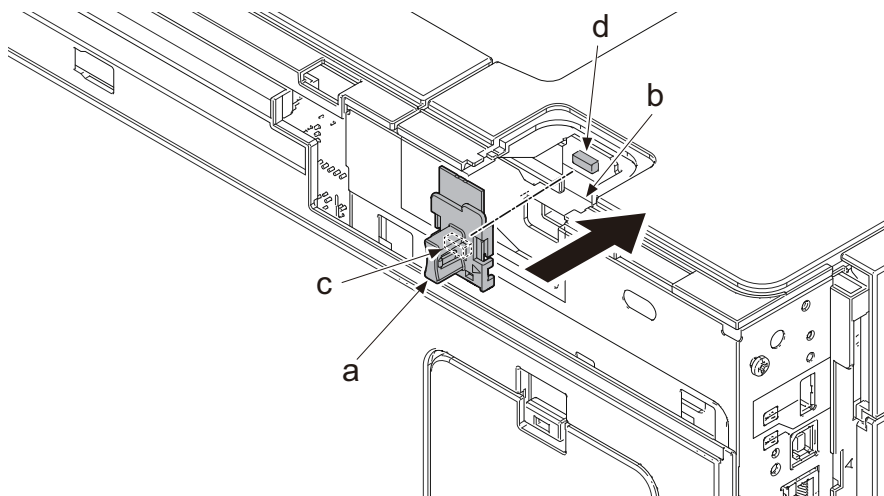


Figure 2-7

10. Attach Wi-Fi cover (a).

\*: Wi-Fi cover (a) is bundled in the machine box.

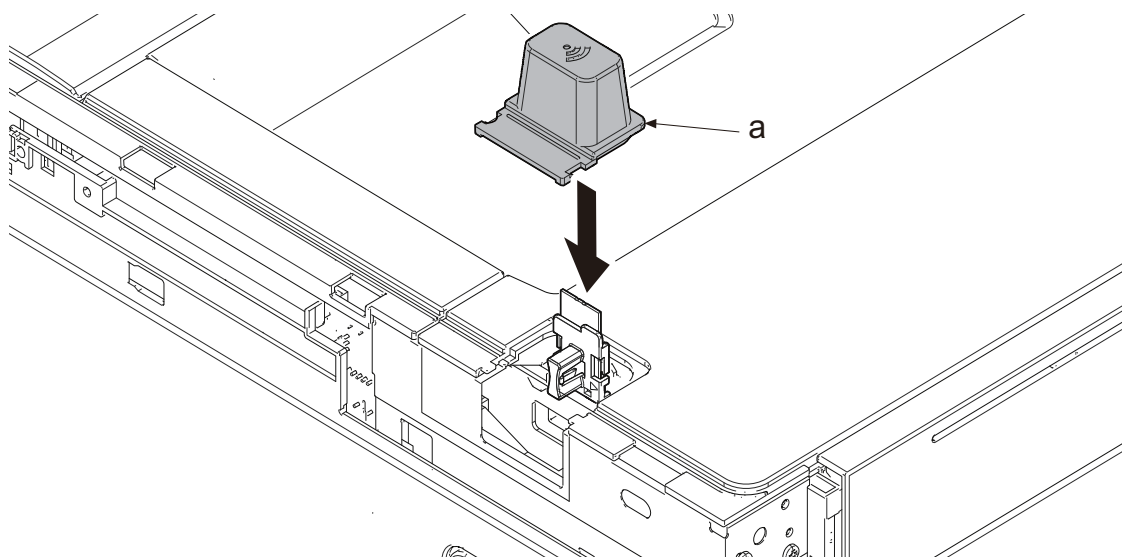
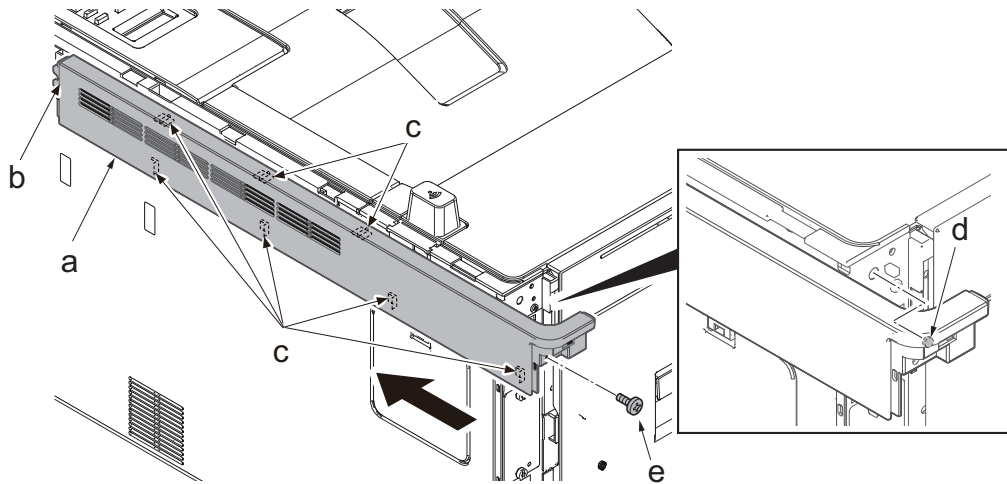


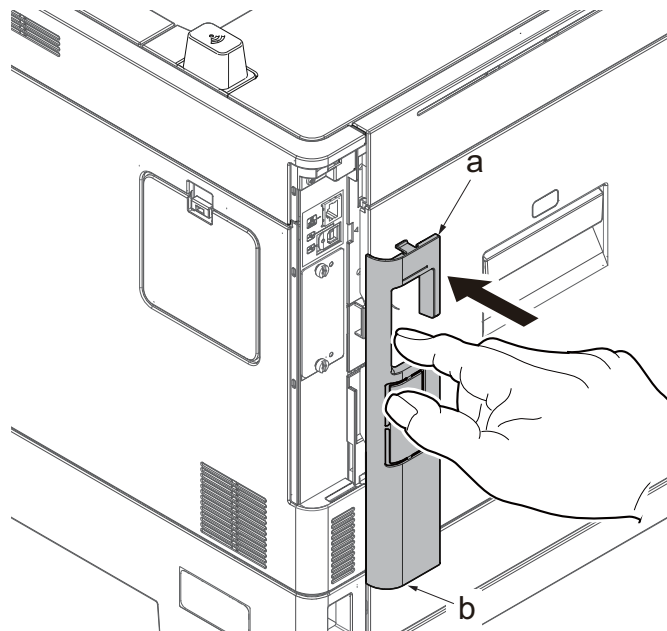
Figure 2-8

11. After inserting the upper right cover (a) at the hook (b) of the machine front side and then, sliding it to the machine front side and fasten seven hooks (c) and insert the positioning boss (d) in the hole to fix in the original position with the screw (e) (M3 x 8).



**Figure 2-9**

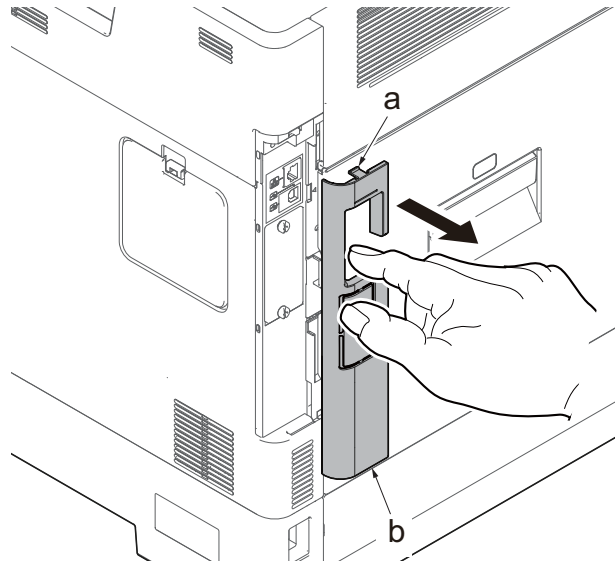
12. Hang the interface cover (a) on the lower side of the hook (b) and restore it in the direction of the arrow.



**Figure 2-10**

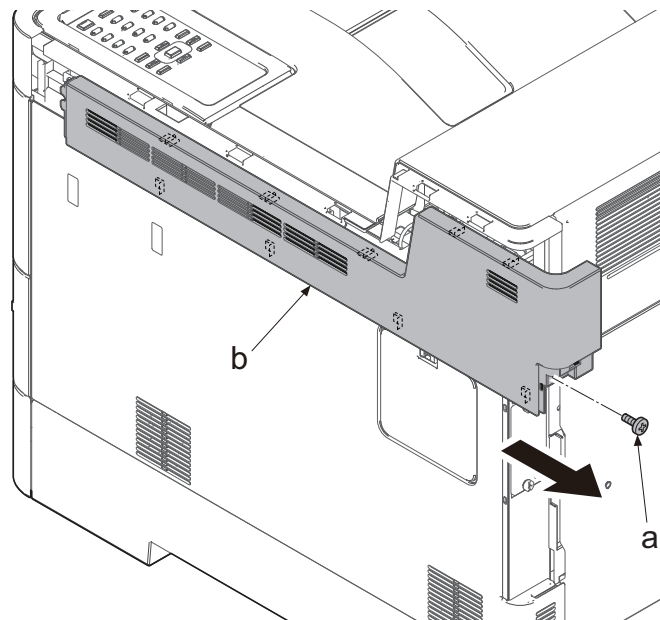
**35/40 ppm model**

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).



**Figure 2-11**

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.



**Figure 2-12**

5. Insert the PWB unit (a) to the opening section (b) of the shield box.
6. Connect the connector (c) from the connector (d) of the main/engine PWB.

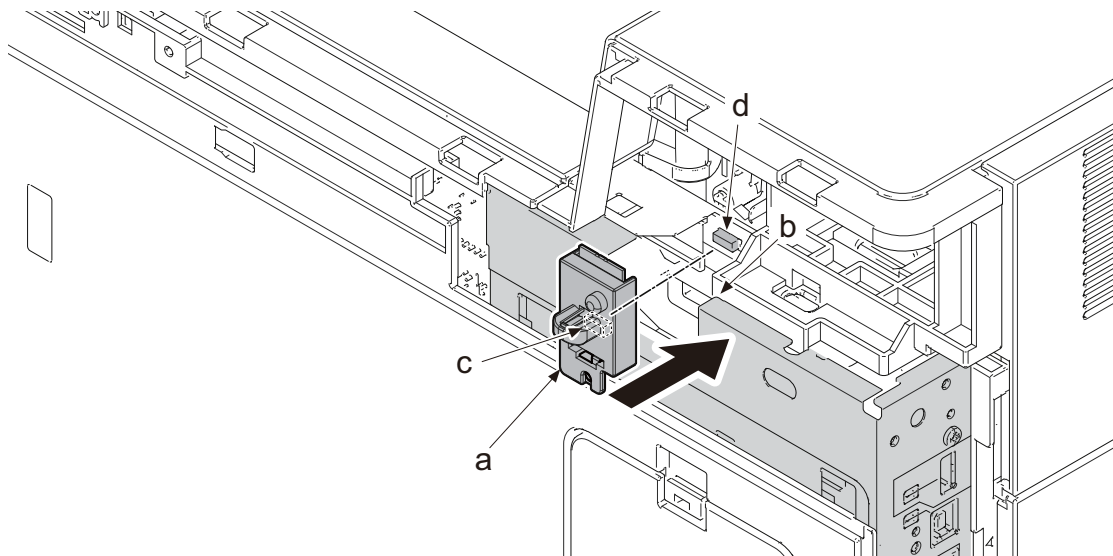


Figure 2-13

7. After inserting the upper right cover (a) at the hook (b) of the machine front side and then, sliding it to the machine front side and fasten nine hooks (c) and insert the positioning boss (d) in the hole to fix in the original position with the screw (e) (M3 x 8).

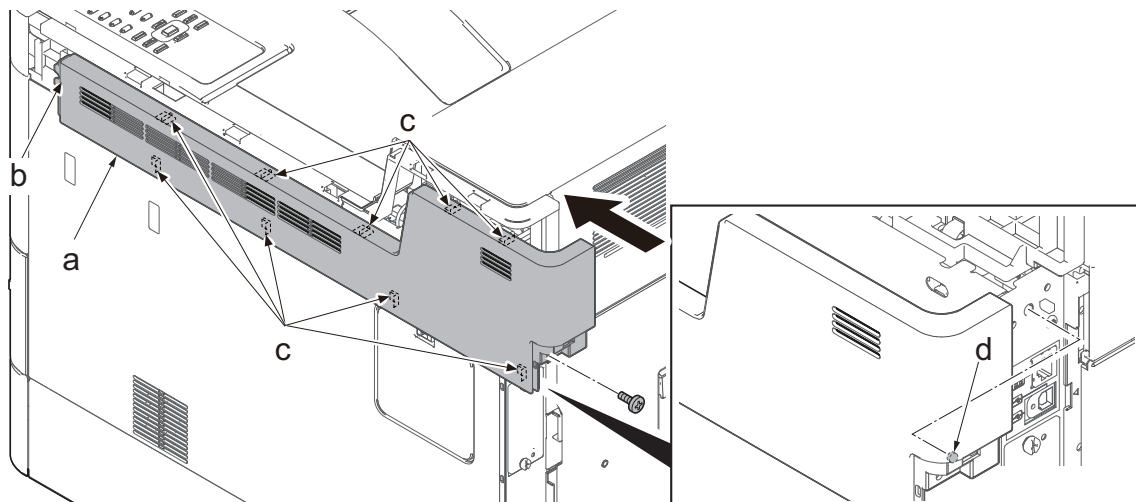


Figure 2-14

8. Hang the interface cover (a) on the lower side of the hook (b) and restore it in the direction of the arrow.

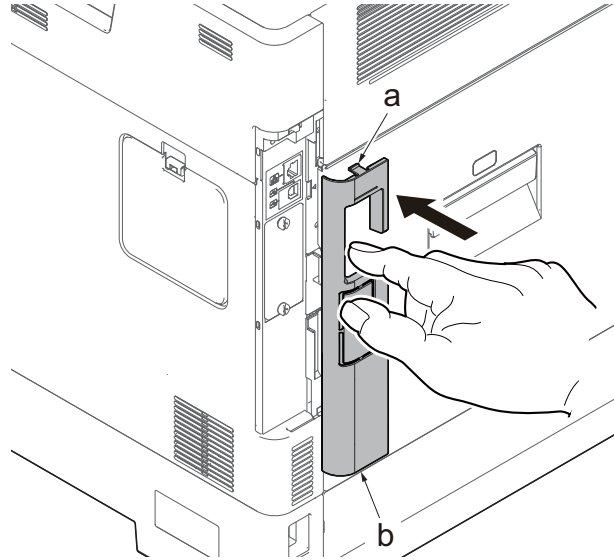


Figure 2-15

### **(9) Data Security Kit(E) (Data Security Kit)**

The Data Security Kit overwrites all unnecessary data in the storage area so that it cannot be retrieved. The Data Security Kit encrypts data before storing it in the SSD. It guarantees higher security because no data can be decrypted by ordinary output or operations.

### **(10)UG-33 (ThinPrint Option)**

This application enables print data to print directly without a printer driver.

## 2-4 Optional Applications

The applications listed below are installed in this machine.

Application
Data Security Kit
Card Authentication Kit
ThinPrint Option *1

\*1: This can be used on a trial basis for a limited time.

\*: Restrictions such as the number of times the application can be used during the trial period differ depending on the application.

\*: If you change the date/time while using the trial version of an application, you will no longer be able to use the application.

### Starting Use of an Application

Use the procedure below to start using an application.

1. [Menu] key > [▲] [▼] key > [Optional Function] > [OK] key

If the login user name entry screen appears during operations, enter a login user name and password, and select [Login]. For this, you need to login with administrator privileges.

The factory default login user name and login password are set as shown below.

Model name	Login User Name	Login Password
30 ppm model	3000	3000
35 ppm model	3500	3500
40 ppm model	4000	4000

2. Select the desired application and select [OK] key.

3. [▲] [▼] key > [License On] > [OK] key

4. [▲] [▼] key > [Official] > [OK] key

\*: To use the application as a trial, select [Trial] without entering the license key.

5. Enter the license key > [OK] key

\*: Some applications do not require you to enter a license key. If the license key entry screen does not appear, go to Step 6.

6. Select [Yes].

If you started the Security Kit or Thin Print option and entered the license key, turn the power OFF/ON.

### Checking Details of an Application

Use the procedure below to check the details of an application.

1. [Menu] > [▲] [▼] key > [Op Functions] > [OK] key

If the login user name entry screen appears during operations, enter a login user name and password, and select [Login]. For this, you need to login with administrator privileges.

The factory default login user name and login password are set as shown below.

<b>Model name</b>	<b>Login User Name</b>	<b>Login Password</b>
30 ppm model	3000	3000
35 ppm model	3500	3500
40 ppm model	4000	4000



### 3 Machine Design 3-1 Mechanical Configuration

(1) Cross-section view (Main unit)  
30 ppm model

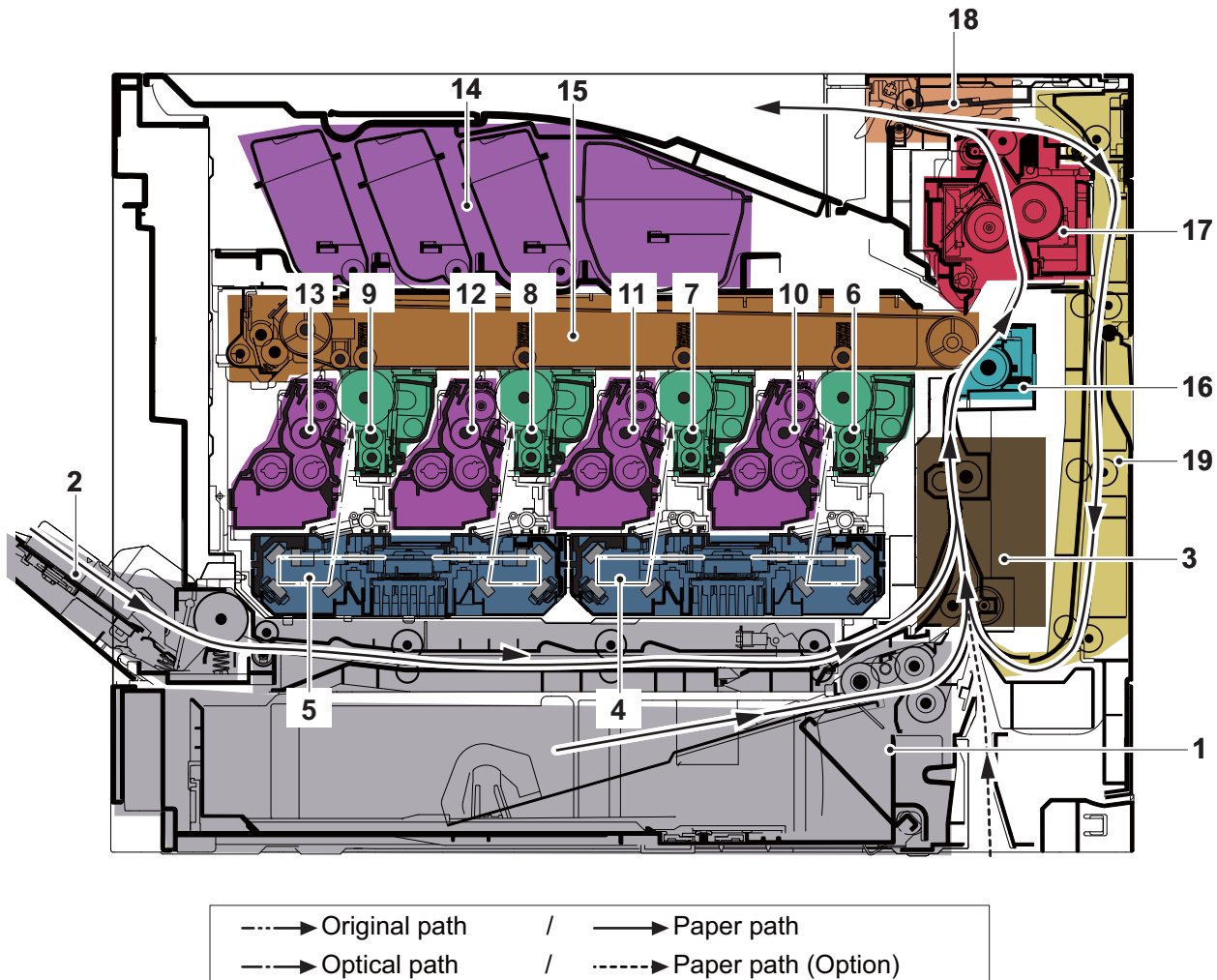


Figure 3-16

(2) Cross-section view (Main unit)

35/40 ppm model

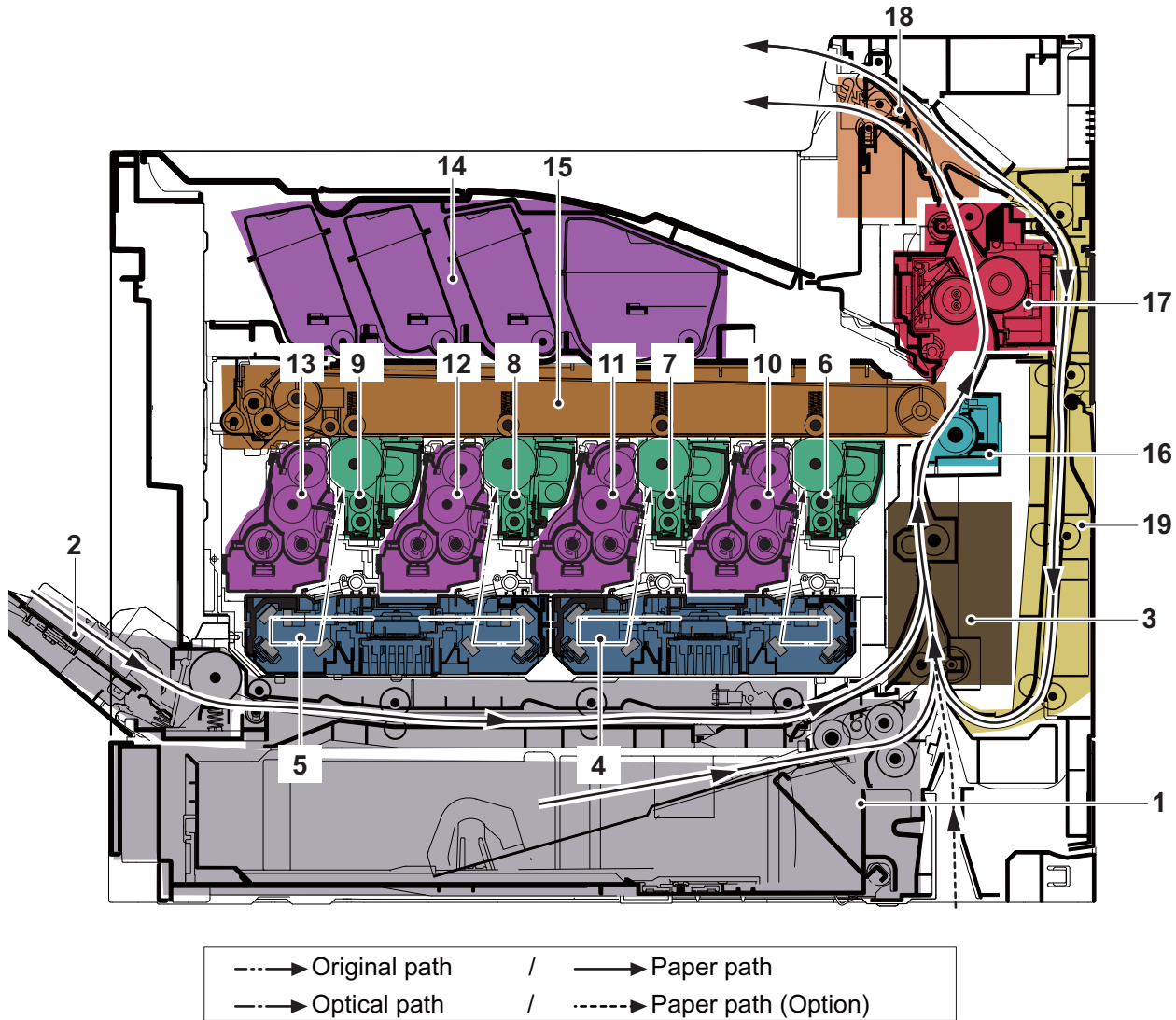
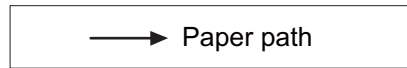
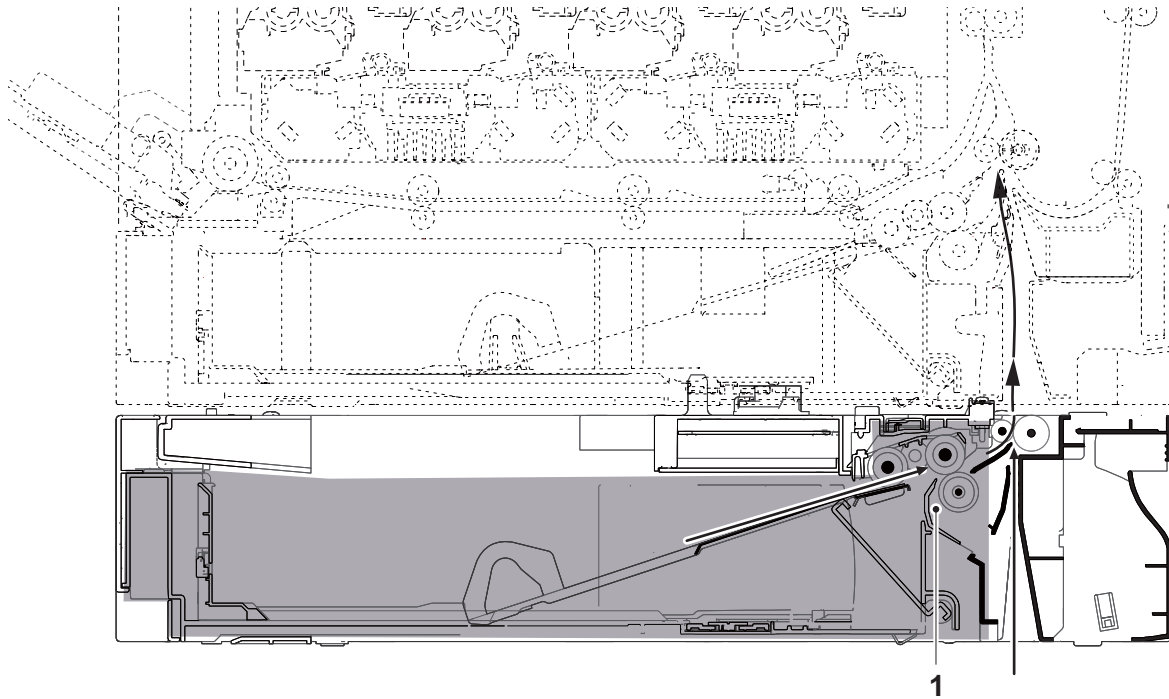


Figure 3-17

- |                                |                              |                                               |
|--------------------------------|------------------------------|-----------------------------------------------|
| 1. Cassette paper feed section | 9. Drum unit Y               | 16. Secondary transfer and separation section |
| 2. MP paper feed section       | 10. Developer unit K         | 17. Fuser section                             |
| 3. Paper conveying section     | 11. Developer unit M         | 18. Feedshift and exit section                |
| 4. Laser scanner unit KM       | 12. Developer unit C         | 19. Duplex conveying section                  |
| 5. Laser scanner unit CY       | 13. Developer unit Y         |                                               |
| 6. Drum unit K                 | 14. Toner container section  |                                               |
| 7. Drum unit M                 | 15. Primary transfer section |                                               |
| 8. Drum unit C                 |                              |                                               |

**(3) Cross-section view (Optional paper feeder)**



**Figure 3-18**

1. Cassette paper feed section

#### (4) Paper conveying and Paper detection

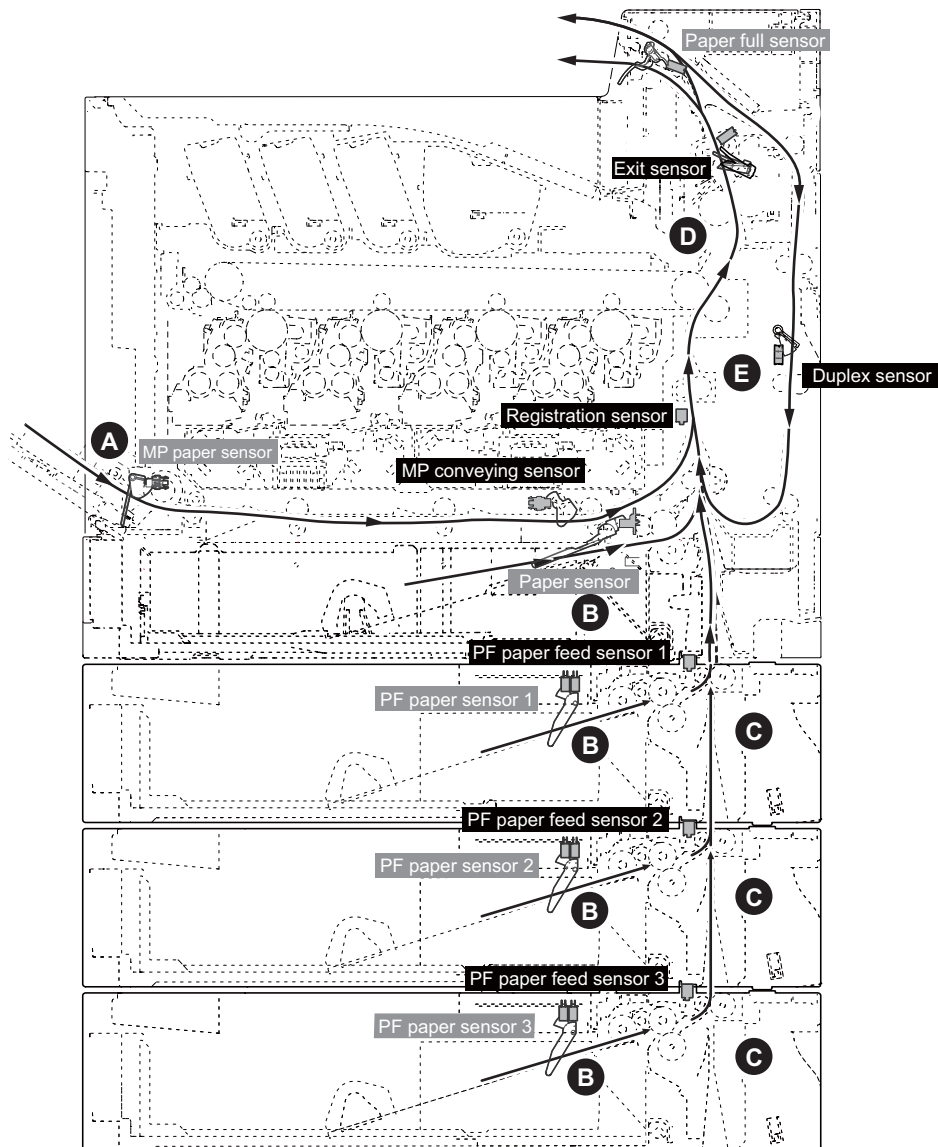


Figure 3-19

#### [Paper jam]

- A. Paper jam at the MP tray
- B. Paper jam at cassette 1-4
- C. Paper jam at rear cover 2-4
- D. Paper jam at rear cover 1
- E. Paper jam at the duplex section

\*Duplex sensor: 35/40 ppm model only

## 3-2 Electric parts

### (1) Wire connection diagram (Machine right side)

30 ppm model

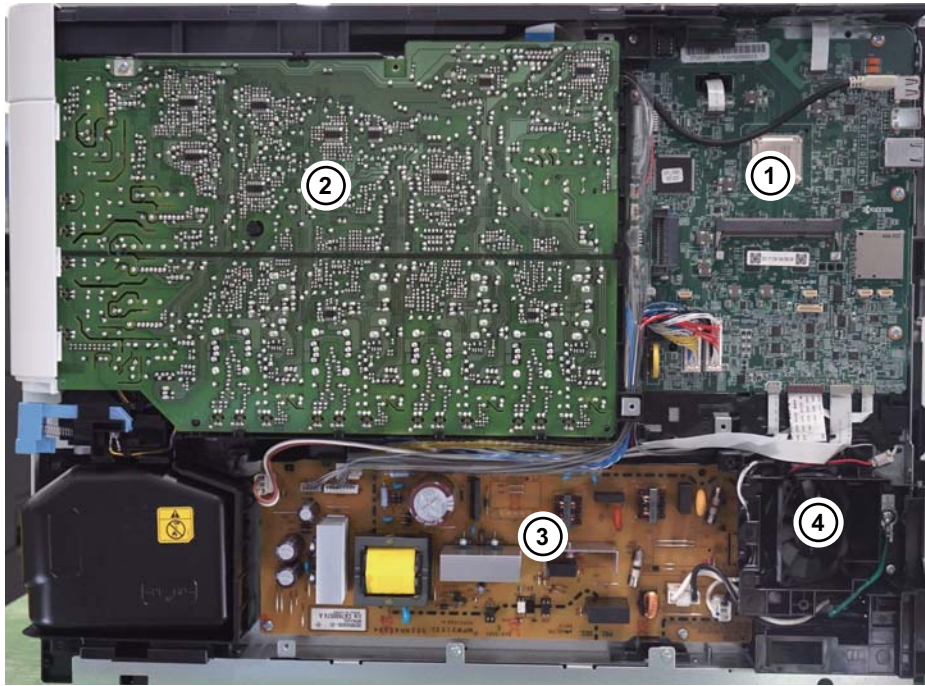


Figure 3-20

35 ppm model

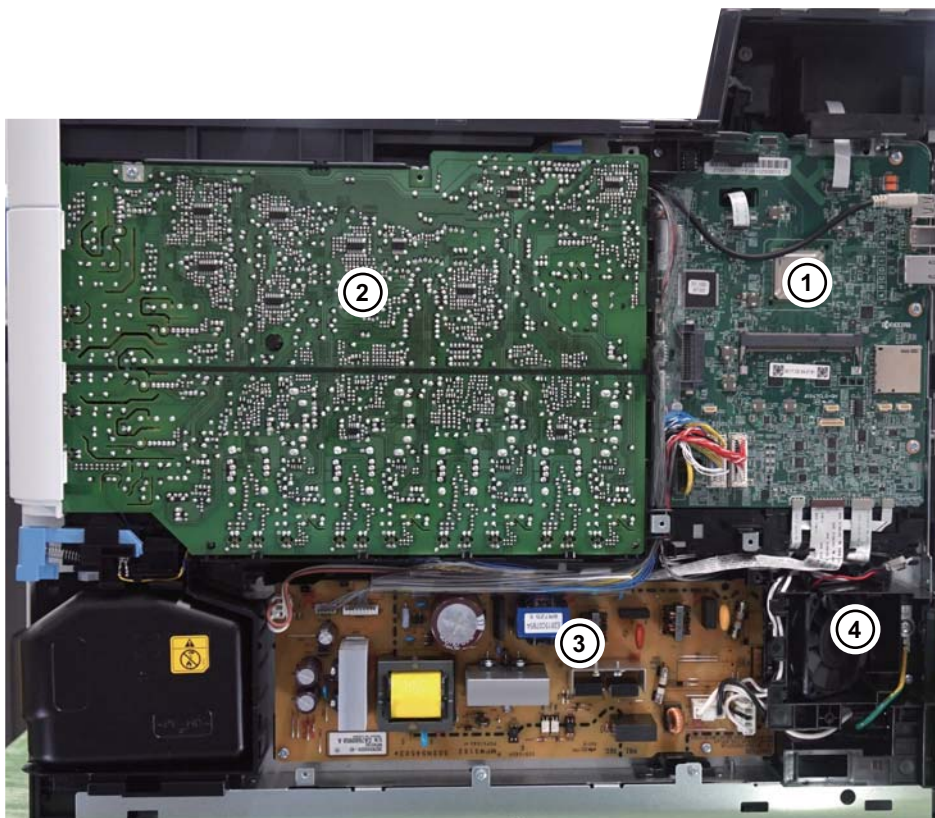
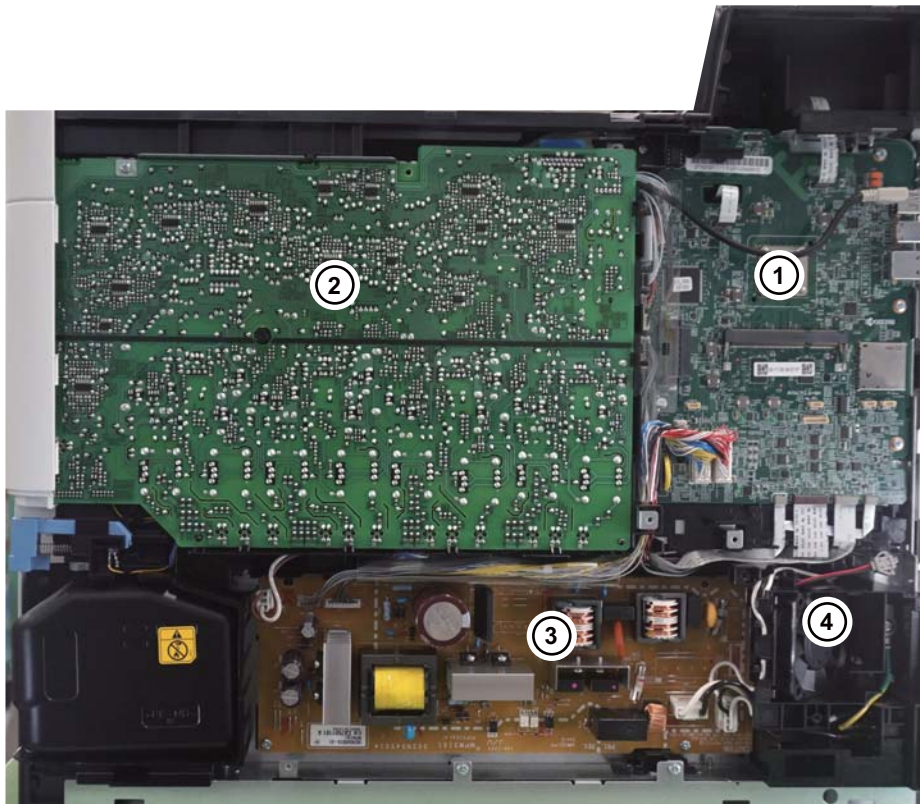


Figure 3-21



40 ppm model



- 1. Main/Engine PWB
- 2. High-voltage PWB

- 3. Power source PWB
- 4. Power source fan motor

**(2) Wire connection diagram (Machine left side)**

30 ppm model

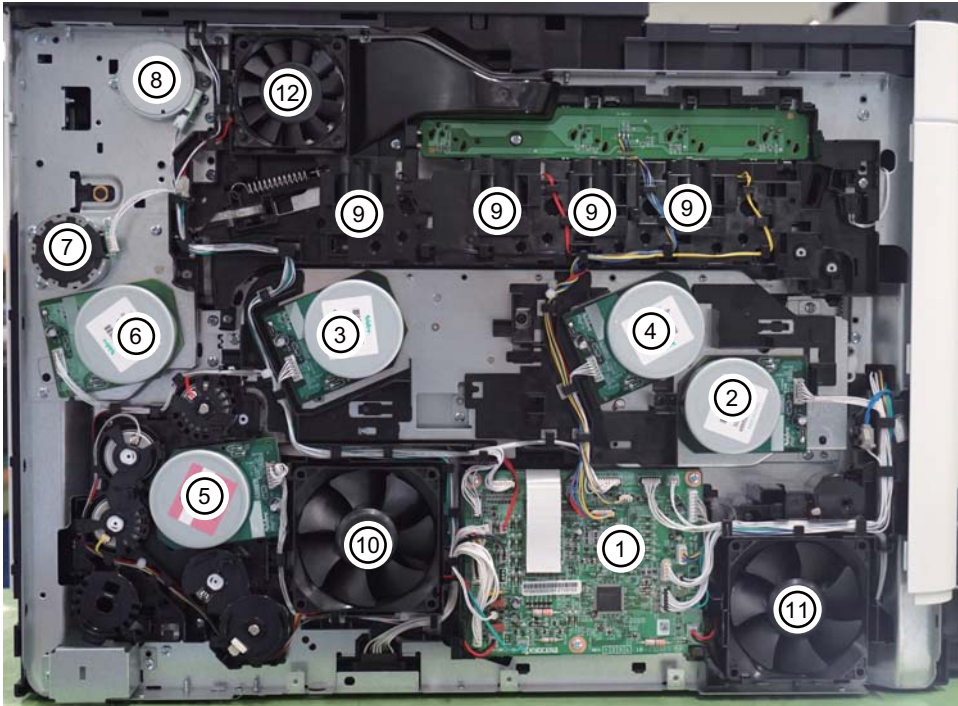


Figure 3-22

35 ppm model

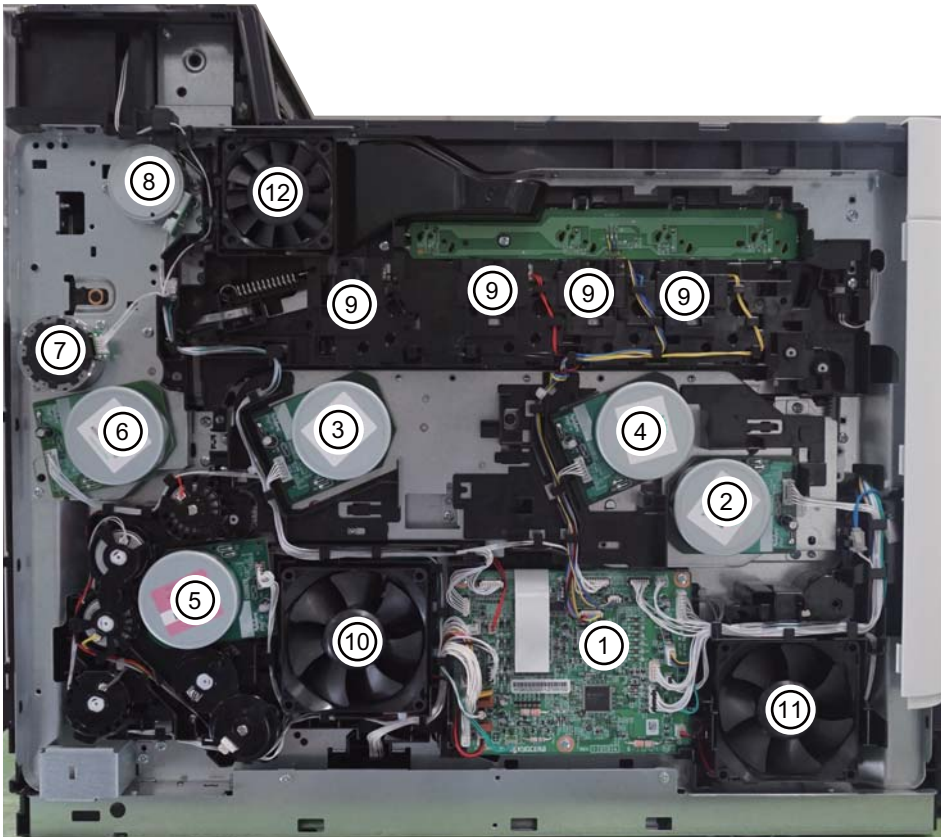


Figure 3-23

40 ppm model

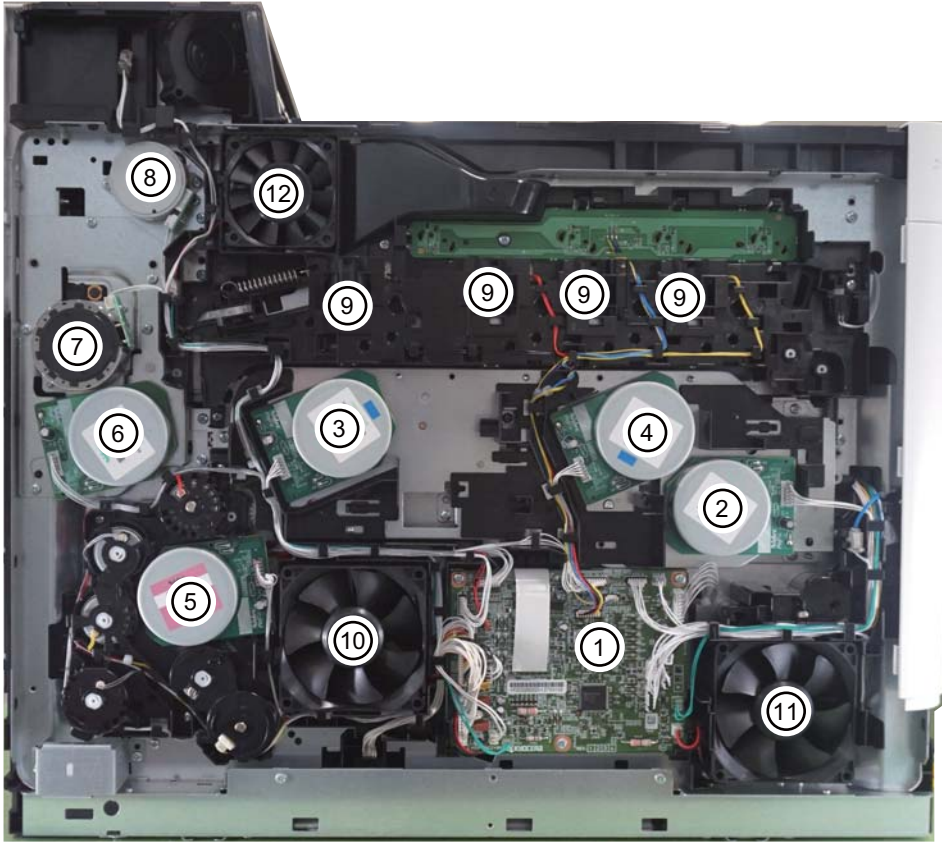


Figure 3-24

- |                              |                         |
|------------------------------|-------------------------|
| 1. Engine relay PWB          | 8. Duplex exit motor    |
| 2. Developer motor           | 9. Toner motor          |
| 3. Drum motor 1              | 10. LSU fan motor 1     |
| 4. Drum motor 2              | 11. LSU fan motor 2     |
| 5. Conveying developer motor | 12. Container fan motor |
| 6. Primary transfer motor    |                         |
| 7. Fuser motor               |                         |



### (3) Descriptions about the major PWBs

#### (3-1) Main/Engine PWB

It controls the software for the interface and the image data processing, and the hardware for the generation of the high-voltage and the bias, and the paper conveying system.

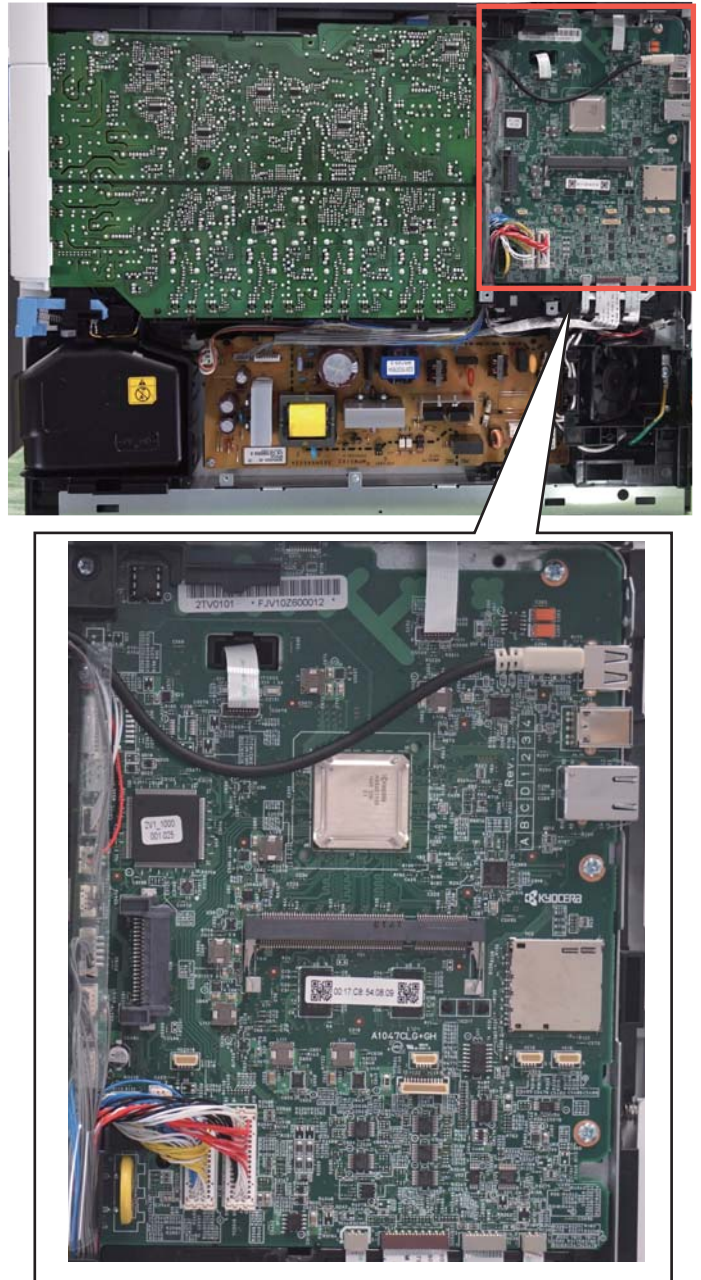


Figure 3-25

### (3-2) Engine relay PWB

Consisting of the drive control circuit for each electric part and the wiring relay circuit to the main/engine PWB

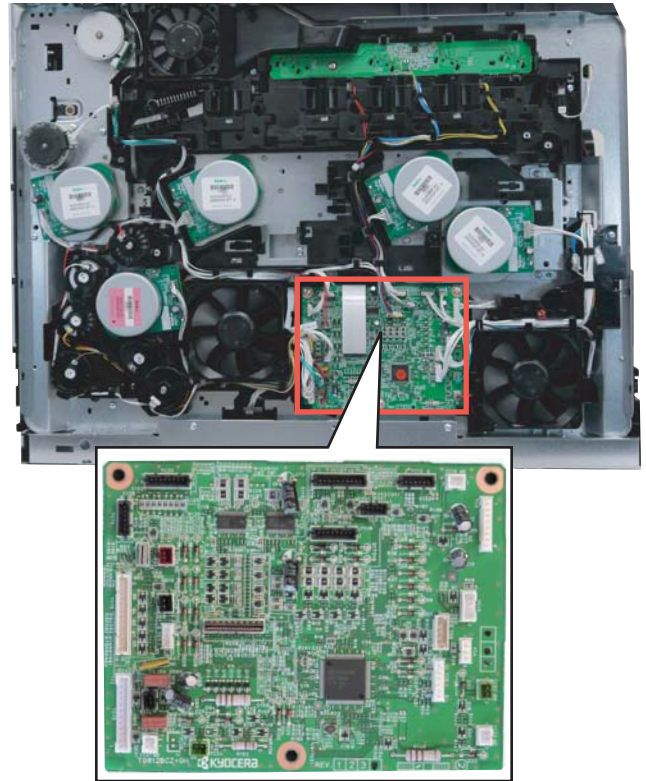


Figure 3-26

### (3-3) High-voltage PWB

#### 30/35 ppm model

Generating the main charger high-voltage and the developer bias, the transfer bias and the transfer cleaning bias.

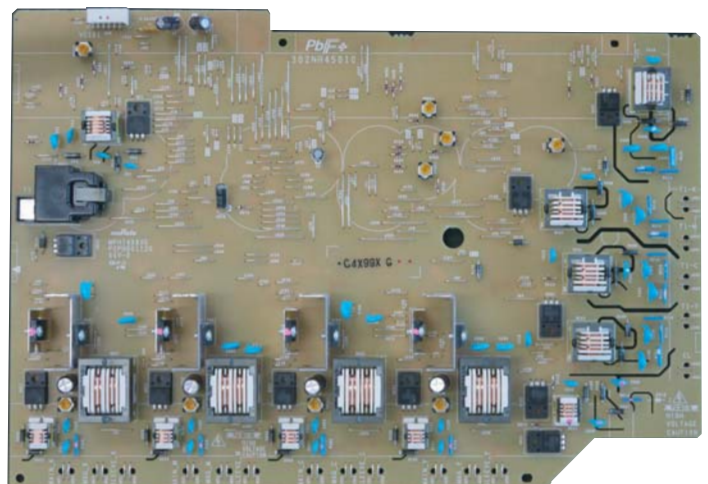


Figure 3-27

#### 40 ppm model

Generating the main charger high-voltage, the developer bias, the pre-bias, and the secondary transfer bias.

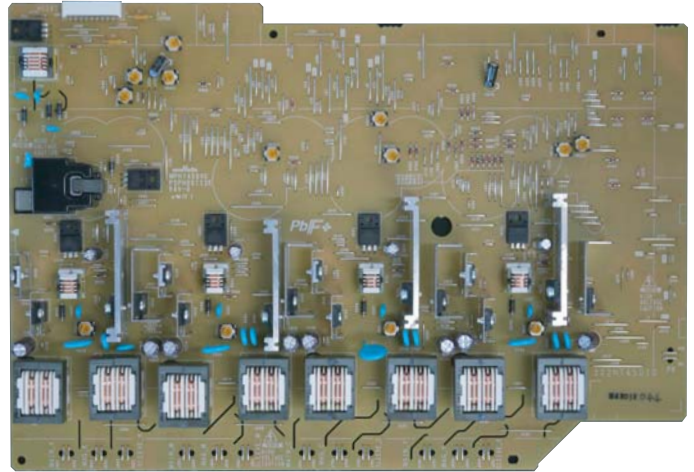


Figure 3-28

#### (3-4) High-voltage PWB 2 (40 ppm model)

Generating the primary transfer bias and the transfer cleaning bias.

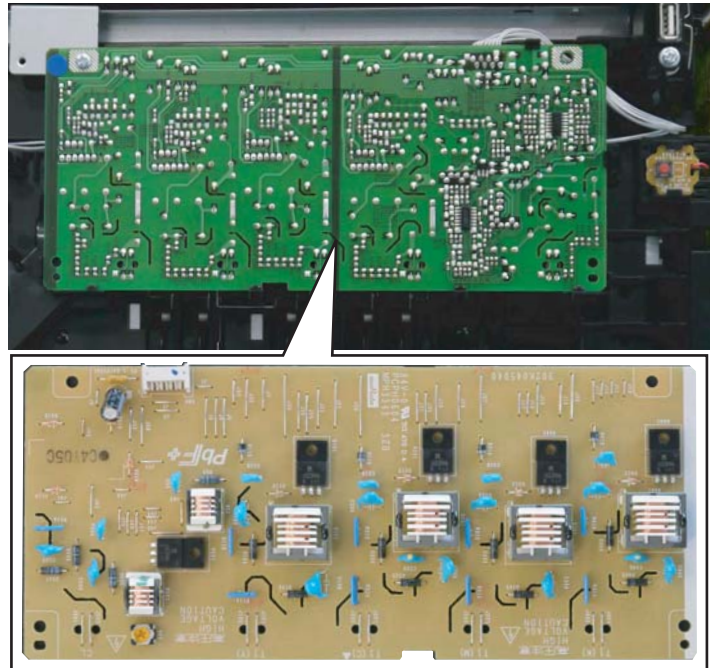


Figure 3-29

#### (3-5) Power source PWB

The input voltage (AC) from the AC power supply is changed to DC such as 24 V DC, and it controls the fuser heater.



Figure 3-30



### (3-6) Operation panel PWB (30 ppm model)

Consisting of the two line LCD, the LED indicator and the key switches.

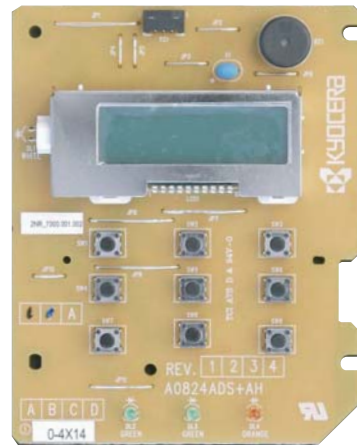


Figure 3-31

### (3-7) Operation panel PWB (35/40 ppm model)

Consisting of the five line LCD, the LED indicator and the key switches.

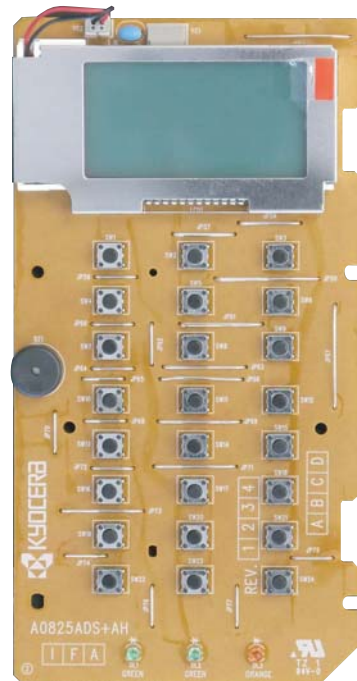


Figure 3-32

**(3-8) PF main PWB (Optional Paper Feeder)**

It controls the interface to the main unit and the entire paper feeder.

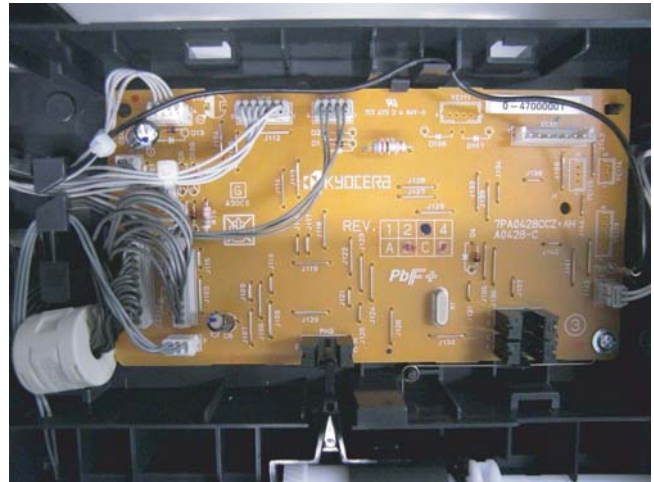


Figure 3-33

### (4) Electric parts layout

#### (4-1) PWBs

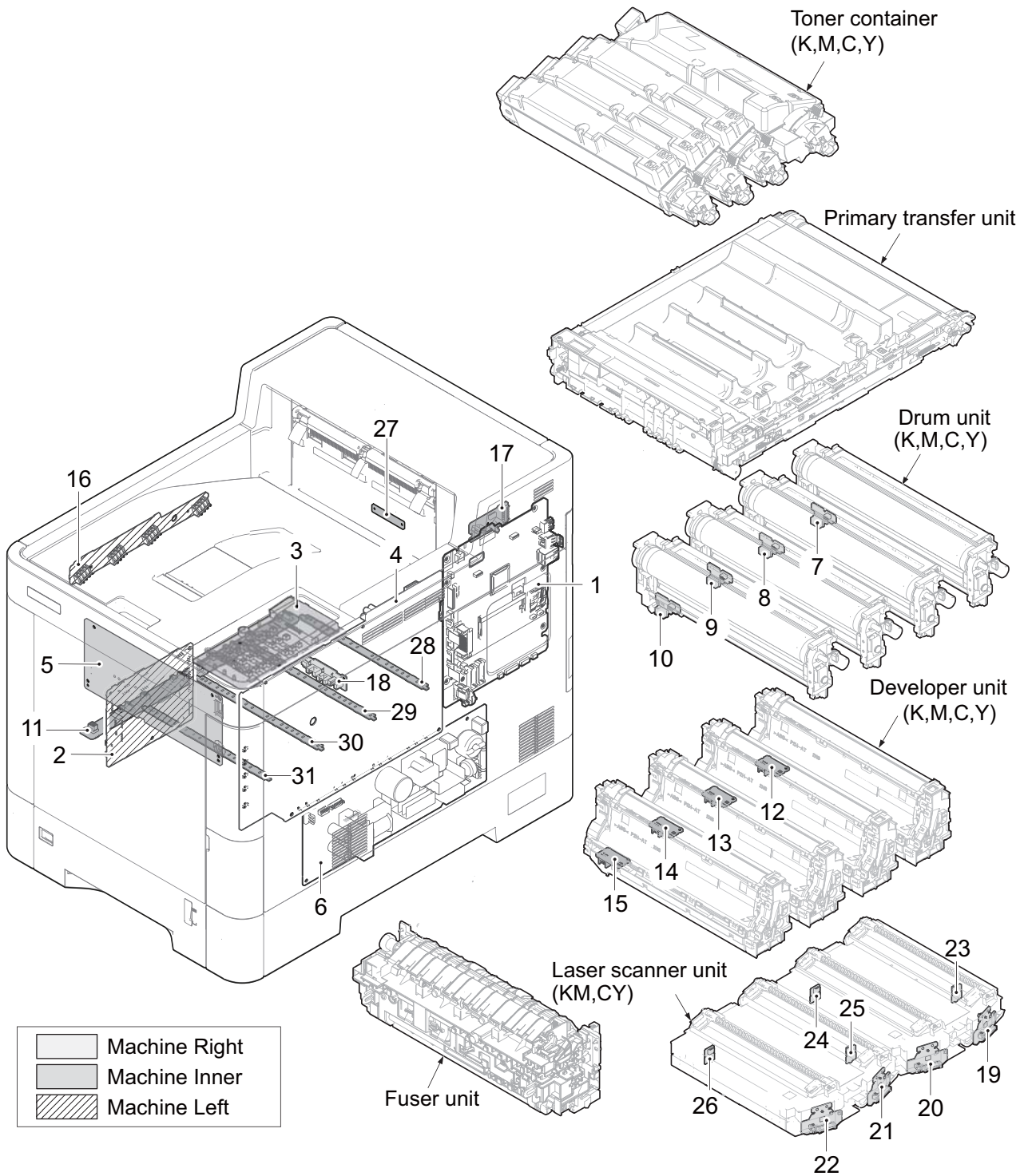


Figure 3-34

1. Main/Engine PWB ..... Controlling the entire software to control the interface to the PC and the network and the image data process, etc.. Controlling the entire hardware to control the high-voltage, bias output, paper conveying system, fuser temperature, etc..
2. Engine relay PWB ..... Consisting of the drive control circuit for each electric part and the wiring relay circuit to the main/engine PWB
3. Operation panel PWB ..... Consisting of the LCD, the LED indicator and the key switches
4. High-voltage PWB..... Generating the main charger high-voltage, the developer bias\*1, the primary transfer bias\*1, the pre-bias\*2, the secondary transfer bias and the transfer cleaning bias\*1
5. High-voltage PWB 2\*2 ..... Generating the primary transfer bias and the transfer cleaning bias
6. Power supply PWB ..... Changing the input voltage (AC) from the AC power supply to DC such as 24 V DC and controlling the fuser heater
7. Drum PWB K..... Wiring relay to the electric parts inside drum unit K and storing the individual drum information in the EEPROM
8. Drum PWB M ..... Wiring relay to the electric parts inside drum unit M and storing the individual drum information in the EEPROM
9. Drum PWB C..... Wiring relay to the electric parts inside drum unit C and storing the individual drum information in the EEPROM
10. Drum PWB Y ..... Wiring relay to the electric parts inside drum unit Y and storing the individual drum information in the EEPROM
11. Drum relay PWB ..... Consisting of the wiring relay circuit to the main/engine PWB, the drum units and the developer units
12. Developer PWB K ..... Wiring relay to the electric parts inside developer unit K
13. Developer PWB M..... Wiring relay to the electric parts inside developer unit M
14. Developer PWB C ..... Wiring relay to the electric parts inside developer unit C
15. Developer PWB Y ..... Wiring relay to the electric parts inside developer unit Y
16. Toner container relay PWB ..... Consisting of the wiring relay circuit between the main/engine PWB and the toner containers
17. Exit PWB ..... Consisting of the wiring relay circuit between the main/engine PWB and each electric part in the exit section
18. Cassette PWB..... Consisting of the wiring relay circuit between the engine relay PWB and each electric part in the cassette
19. APC PWB K ..... Emitting and controlling the laser beam (Black)
20. APC PWB M..... Emitting and controlling the laser beam (Magenta)
21. APC PWB C ..... Emitting and controlling the laser beam (Cyan)
22. APC PWB Y ..... Emitting and controlling the laser beam (Yellow)
23. PD PWB K..... Controlling the synchronous lateral laser beam (Black)
24. PD PWB M ..... Controlling the synchronous lateral laser beam (Magenta)
25. PD PWB C ..... Controlling the synchronous lateral laser beam (Cyan)
26. PD PWB Y..... Controlling the synchronous lateral laser beam (Yellow)
27. Zener PWB..... Controlling the fuser erasing voltage
28. Drum heater K PWB..... Controlling the drum heater K\*2
29. Drum heater M PWB ..... Controlling the drum heater M\*2
30. Drum heater C PWB ..... Controlling the drum heater C\*2
31. Drum heater Y PWB..... Controlling the drum heater Y\*2

\*1: 30/35 ppm model only

\*2: 40 ppm model only

**(4-2) Part name table**

No.	Name used in service manual	Name used in parts list	Part.No.
1	Main/Engine PWB	PARTS PWB ASSY MAIN SP	(Except for EU) 302TV9403_ (30 ppm model) 302TW9402_ (35 ppm model) 302TX9401_ (40 ppm model)
		PARTS PWB ASSY MAIN EU SP	(EU) 302TV9404_ (30 ppm model) 302TW9403_ (35 ppm model) 302TX9402_ (40 ppm model)
2	Engine relay PWB	PARTS PWB ASSY ENGINE CONNECT SP	302TV9405_ (30 ppm model) 302TW9404_ (35 ppm model) 302TX9403_ (40 ppm model)
3	Operation panel PWB	PARTS OPERATION ASSY SP	302TV9402_ (30 ppm model) 302TW9401_ (35/40 ppm model)
4	High-voltage PWB	PARTS HIGH VOLTAGE UNIT SP	302NR9403_ (30/35 ppm model) 302NT9401_ (40 ppm model)
5	High-voltage PWB 2*2	HVU2	302K04504_
6	Power source PWB	PARTS SWITCHING REGULATOR 100V SP	(100/120V) 302NR9404_ (30 ppm model) 302NS9401_ (35/40 ppm model)
		PARTS SWITCHING REGULATOR 230V SP	(230V) 302NR9405_ (30 ppm model) 302NS9402_ (35/40 ppm model)
7	Drum PWB K	- (DK-5140) (DK-5160)	- (302NR9301_) (30/35 ppm model) (302NT9301_) (40 ppm model)
8	Drum PWB M		
9	Drum PWB C		
10	Drum PWB Y		
11	Drum relay PWB	PARTS PWB ASSY DRUM CONNECT SP	302NR9412_ (30/35 ppm model) 302NT9402_ (40 ppm model)
12	Developer PWB K	- (DV-5140 (K)) (DV-5150 (K)) (DV-5290 (K)) (DV-5290 (K)(J))	- (302NR9302_) (30 ppm model) (302NS9301_) (35 ppm model) (302TX9306_) (40 ppm model) (302TX9J06_) (40 ppm model) [100V]
13	Developer PWB M	- (DV-5140 (M)) (DV-5150 (M)) (DV-5290 (M)) (DV-5290 (M)(J))	- (302NR9304_) (30 ppm model) (302NS9303_) (35 ppm model) (302TX9308_) (40 ppm model) (302TX9J08_) (40 ppm model) [100V]



No.	Name used in service manual	Name used in parts list	Part.No.
14	Developer PWB C	- (DV-5140 (C)) (DV-5150 (C)) (DV-5290 (C)) (DV-5290 (C)(J))	- (302NR9305_) (30 ppm model) (302NS9304_) (35 ppm model) (302TX9309_) (40 ppm model) (302TX9J09_) (40 ppm model) [100V]
15	Developer PWB Y	- (DV-5140 (Y)) (DV-5150 (Y)) (DV-5290 (Y)) (DV-5290 (Y)(J))	- (302NR9303_) (30 ppm model) (302NS9302_) (35 ppm model) (302TX9307_) (40 ppm model) (302TX9J07_) (40 ppm model) [100V]
16	Toner container relay PWB	PARTS PWB ASSY CONTAINER CONN SP	302TV9406_
17	Exit PWB	PARTS PWB ASSY EXIT SP	302NR9413_ (30 ppm model) 302NS9405_ (35 ppm model) 302TX9304_ (40 ppm model)
18	Cassette PWB	PARTS PWB ASSY CASSETTE SP	302KV9434_
19	APC PWB K	- (LK-5270A) (LK-5290A)	- (302TV9301_) (30/35 ppm model) (302TX9301_) (40 ppm model)
20	APC PWB M		
21	APC PWB C	- (LK-5270B) (LK-5290B)	- (302TV9302_) (30/35 ppm model) (302TX9302_) (40 ppm model)
22	APC PWB Y		
23	PD PWB K	- (LK-5270A) (LK-5290A)	- (302TV9301_) (30/35 ppm model) (302TX9301_) (40 ppm model)
24	PD PWB M		
25	PD PWB C	- (LK-5270B) (LK-5290B)	- (302TV9302_) (30/35 ppm model) (302TX9302_) (40 ppm model)
26	PD PWB Y		
27	Zener PWB	P.W.BOARD ASSY FUSER ZENER	302HN0124_
28	Drum heater PWB K*2	PARTS PWB ASSY DRUM HEATER SP	302NT9409_
29	Drum heater PWB M*2		
30	Drum heater PWB C*2		
31	Drum heater PWB Y*2		

\*1: 30/35 ppm model only

\*2: 40 ppm model only

(4-3) Sensors and Switches

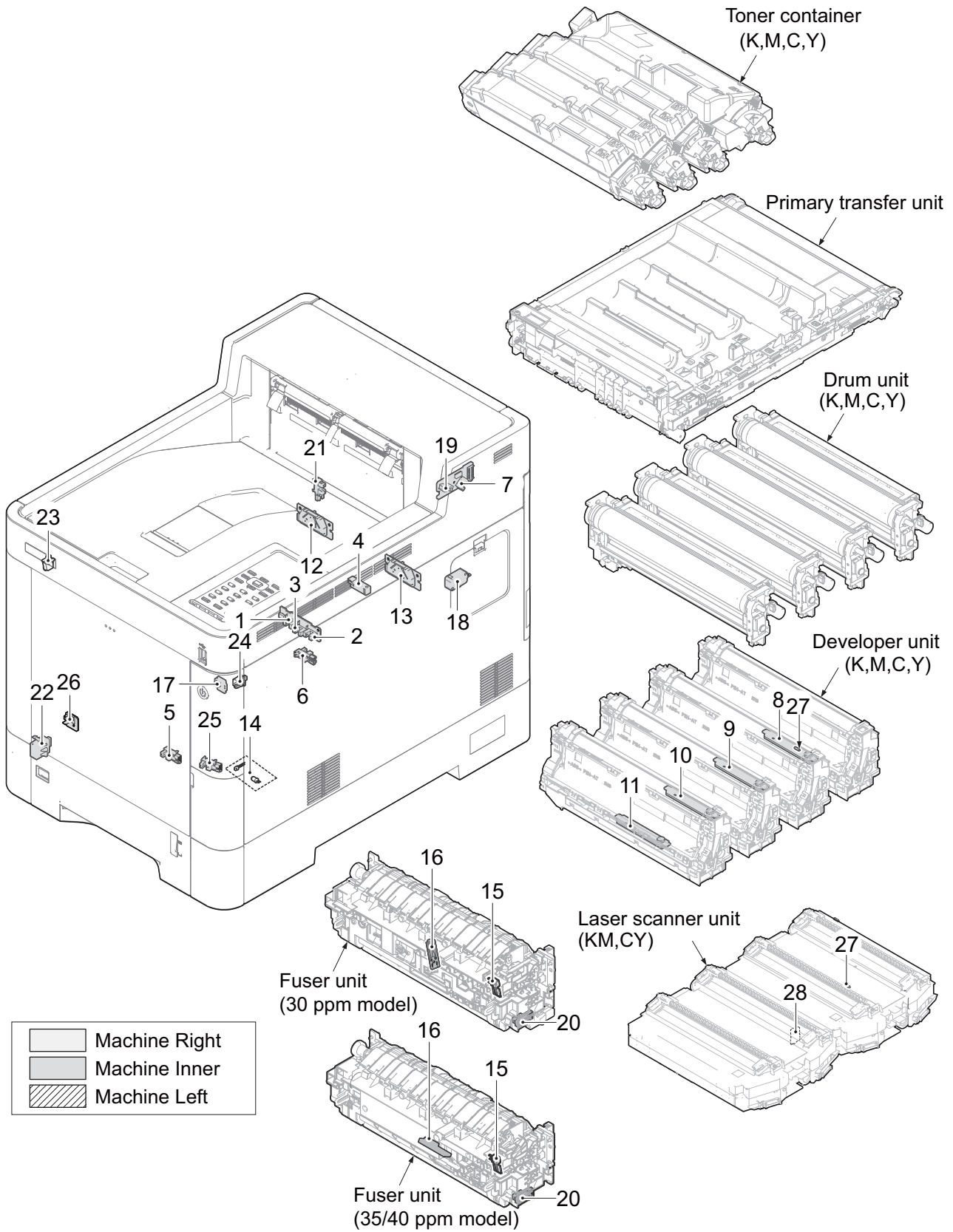


Figure 3-35

1. Paper sensor 1..... Detecting the paper level in the cassette
2. Paper sensor 2..... Detecting the paper level in the cassette
3. Lift sensor..... Detecting the upper limit when lifting the lift plate inside the cassette
4. Registration sensor ..... Controlling the timing to start the secondary paper feeding
5. MP paper sensor..... Detecting the presence of the paper on the MP tray
6. MP conveying sensor..... Detecting the paper jam at the MP conveying section
7. Exit sensor ..... Detecting the paper jam at the fuser section
8. Toner sensor K..... Detecting the toner amount inside developer unit K
9. Toner sensor M ..... Detecting the toner amount inside developer unit M
10. Toner sensor C..... Detecting the toner amount inside developer unit C
11. Toner sensor Y..... Detecting the toner amount inside developer unit Y
12. ID sensor 1..... Measuring the toner density at the calibration
13. ID sensor 2..... Measuring the toner density at the calibration
14. Waste toner sensor ..... Detecting the waste toner amount inside the waste toner box
15. Fuser thermistor 1 ..... Detecting the temperature at the heat roller (edge)
16. Fuser thermistor 2 ..... Detecting the temperature at the heat roller (center)
17. Power switch..... Turning on and off the main/engine PWB, the engine relay PWB and the operation panel PWB, etc.
18. Interlock switch..... Shutting off the 24V power supply line and resetting when the top tray or the rear cover is opened
19. Paper full sensor ..... Detecting the paper-full on the top tray
20. Press-release sensor ..... Detecting the mode of the fuser pressure
21. Duplex sensor\*1..... Detecting the paper jam at the duplex section
22. Cassette size switch..... Detecting the paper size setting by the size dial and detecting the presence of cassette
23. Tray switch ..... Detecting the opening and closing of the top tray
24. Toner container switch ..... Detecting the presence of the toner container
25. Waste toner cover sensor ..... Detecting the opening and closing of the waste toner cover
26. Outer temperature sensor ..... Detecting the temperature and humidity outside the main unit
27. Developer thermistor..... Detecting the temperature inside developer unit K
28. LSU thermistor KM..... Detecting the temperature inside LSU
29. LSU thermistor CY ..... Detecting the temperature inside LSU

\*1: 35/40 ppm model only

**(4-4) Part name table**

No.	Name used in service manual	Name used in parts list	Part.No.
1	Paper sensor 1	-	-
2	Paper sensor 2		
3	Lift sensor		
4	Registration sensor	PARTS SENSOR OPT. SP	303NW9404_
5	MP paper sensor	PARTS SENSOR OPT. SP	302P79401_
6	MP conveying sensor	PARTS SENSOR OPT. SP	302P79401_
7	Exit sensor	PARTS PWB ASSY EXIT SP	302NR9413_ (30 ppm model) 302NS9405_ (35 ppm model) 302TX9304_ (40 ppm model)
8	Toner sensor K	- (DV-5140 (K)) (DV-5150 (K)) (DV-5290 (K)) (DV-5290 (K)(J))	- (302NR9302_) (30 ppm model) (302NS9301_) (35 ppm model) (302TX9306_) (40 ppm model) (302TX9J06_) (40 ppm model) [100V]
9	Toner sensor M	- (DV-5140 (M)) (DV-5150 (M)) (DV-5290 (M)) (DV-5290 (M)(J))	- (302NR9304_) (30 ppm model) (302NS9303_) (35 ppm model) (302TX9308_) (40 ppm model) (302TX9J08_) (40 ppm model) [100V]
10	Toner sensor C	- (DV-5140 (C)) (DV-5150 (C)) (DV-5290 (C)) (DV-5290 (C)(J))	- (302NR9305_) (30 ppm model) (302NS9304_) (35 ppm model) (302TX9308_) (40 ppm model) (302TX9J09_) (40 ppm model) [100V]
11	Toner sensor Y	- (DV-5140 (Y)) (DV-5150 (Y)) (DV-5290 (Y)) (DV-5290 (Y)(J))	- (302NR9303_) (30 ppm model) (302NS9302_) (35 ppm model) (302TX9303_)?40 ppm model) (302TX9J03_)?40 ppm model) [100V]
12	ID sensor 1	PARTS ID SENSOR SP	302NR9402_
13	ID sensor 2	PARTS ID SENSOR SP	302NR9402_
14	Waste toner sensor	PARTS TONER FULL DETECT ASSY SP	302NR9407_

No.	Name used in service manual	Name used in parts list	Part.No.
15	Fuser thermistor 1		-
16	Fuser thermistor 2	- (FK-5141) (FK-5142) (FK-5140) (FK-5151) (FK-5152) (FK-5150) (FK-5291) (FK-5292) (FK-5290)	(302NR9310_) (30 ppm model) [100V] (302NR9311_) (30 ppm model) [120V] (302NR9309_) (30 ppm model) [230V] (302PB9310_) (35 ppm model) [100V] (302PB9311_) (35 ppm model) [120V] (302PB9309_) (35 ppm model) [230V] (302TX9305_) (40 ppm model) [100V] (302TX9304_) (40 ppm model) [120V] (302TX9303_) (40 ppm model) [230V]
17	Power switch	PARTS PWB ASSY EXIT SP	302NR9416_
18	Interlock switch	SW.MICRO	7SM010104+++H01
19	Paper full sensor	- (PARTS PWB ASSY EXIT SP)	- (302NR9413_) (30 ppm model) (302NS9405_) (35 ppm model) (302TX9404_) (40 ppm model)
20	Press-release sensor	- (FK-5141) (FK-5142) (FK-5140) (FK-5151) (FK-5152) (FK-5150) (FK-5291) (FK-5292) (FK-5290)	- (302NR9310_) (30 ppm model) [100V] (302NR9311_) (30 ppm model) [120V] (302NR9309_) (30 ppm model) [230V] (302PB9310_) (35 ppm model) [100V] (302PB9311_) (35 ppm model) [120V] (302PB9309_) (35 ppm model) [230V] (302TX9305_) (40 ppm model) [100V] (302TX9304_) (40 ppm model) [120V] (302TX9303_) (40 ppm model) [230V]
21	Duplex sensor*1	SENSOR OPT.	7NXSG2A241++H01
22	Cassette size switch	SWITCH SIZE	302HN4418_
23	Tray switch	SW.PUSH	7SP01000004+H01
24	Toner container switch	SW.PUSH	7SP01000004+H01

No.	Name used in service manual	Name used in parts list	Part.No.
25	Waste toner cover sensor	PARTS SENSOR OPT. SP	302P79401_
26	Outer temperature sensor	PARTS PWB ASSY THERM- ISTOR SP	302M29413_
26	Developer thermistor K	- (DV-5140 (K)) (DV-5150 (K)) (DV-5290 (K)) (DV-5290 (K)(J))	- (302NR9302_) (30 ppm model) (302NS9301_) (35 ppm model) (302TX9306_) (40 ppm model) (302TX9J06_) (40 ppm model) [100V]
27	LSU thermistor KM	- (LK-5270A) (LK-5290A)	- (302TV9301_) (30/35 ppm model) (302TX9301_) (40 ppm model)
28	LSU thermistor YC	- (LK-5270B) (LK-5290B)	- (302TV9302_) (30/35 ppm model) (302TX9302_) (40 ppm model)

\*1: 35/40 ppm model only

(4-5) Motors

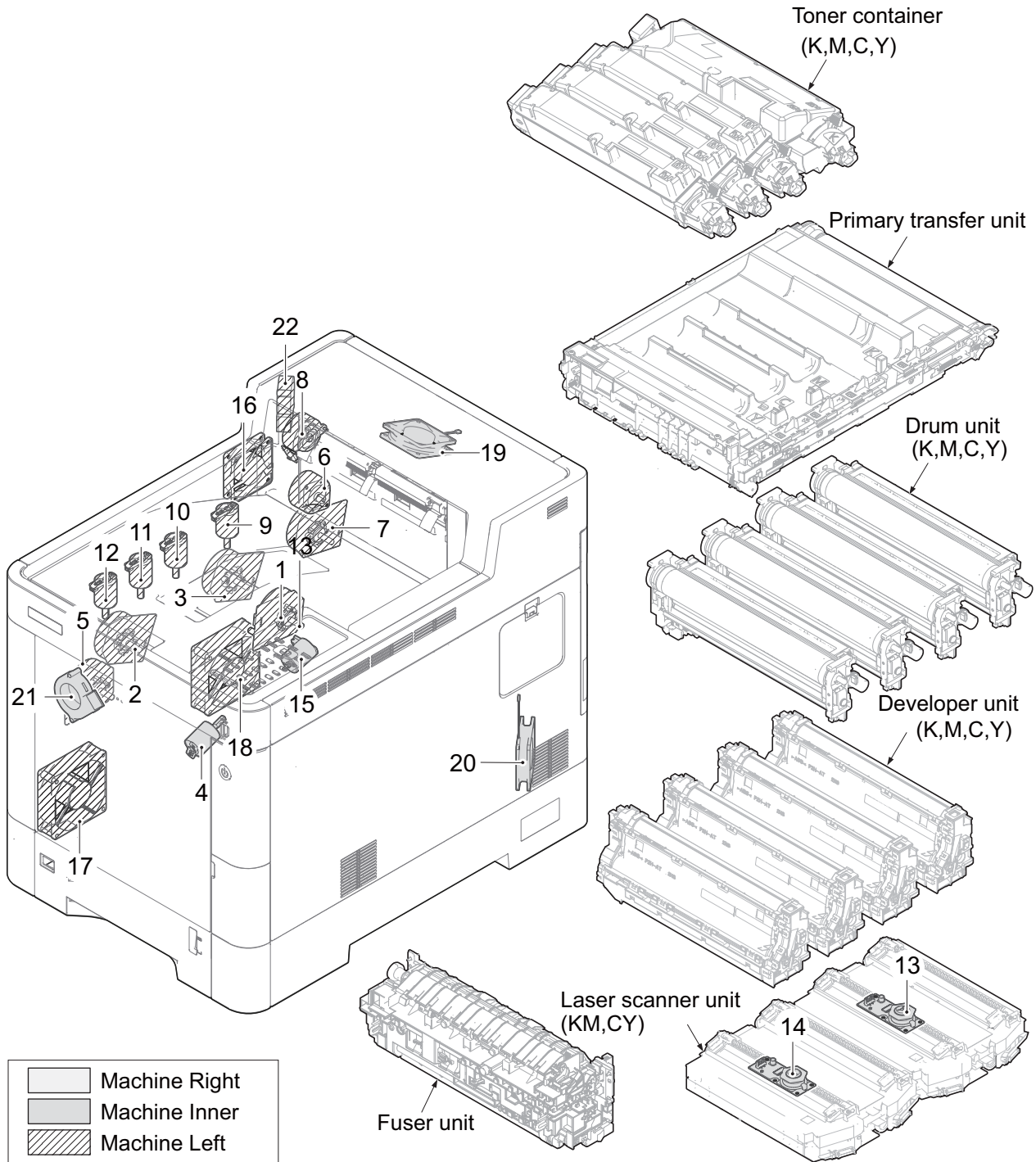


Figure 3-36

1. Conveying developer motor ..... Driving the paper feeding and conveying systems and developer unit K
2. Drum motor 1 ..... Driving drum unit K and M
3. Drum motor 2 ..... Driving drum unit C and Y
4. Lift motor ..... Operating the lift plate inside the cassette
5. Developer motor..... Driving developer unit Y, M and C
6. Fuser motor..... Driving the transfer and fuser sections
7. Primary transfer motor ..... Driving the primary transfer unit
8. Duplex exit motor ..... Driving the duplex conveying and exit section
9. Toner motor K..... Supplying the toner to developer unit K
10. Toner motor M..... Supplying the toner to developer unit M
11. Toner motor C ..... Supplying the toner to developer unit C
12. Toner motor Y..... Supplying the toner to developer unit Y
13. Polygon motor KM..... Driving polygon mirror KM
14. Polygon motor CY ..... Driving polygon mirror CY
15. LSU cleaning motor..... Driving the LSU glass cleaning system
16. Container fan motor ..... Cooling the developer unit
17. LSU fan motor 1 ..... Cooling LSU-KM
18. LSU fan motor 2 ..... Cooling LSU-CY
19. Exit fan motor ..... Diffusing the steam
20. Power supply fan motor ..... Cooling the power supply unit
21. Transfer fan motor..... Cooling the primary transfer unit
22. Duplex fan motor\*1 ..... Cooling the duplex paper at the exit section

\*1: 40 ppm model only



**(4-6) Part name table**

No.	Name used in service manual	Name used in parts list	Part.No.
1	Conveying developer motor	PARTS MOTOR-BL W10 SP	302LC9429_
2	Drum motor 1	PARTS MOTOR-BL W20 SP (DR-5140) (DR-5150)	302K99432_ (302NR9313_) (30 ppm model) (302NT9312_) (35/40 ppm model)
3	Drum motor 2		
4	Lift motor	PARTS DC MOTOR ASSY SP	302NR9409_
5	Developer motor	PARTS MOTOR-BL W20 SP (DR-5140) (DR-5150)	302K99432_ (302NR9313_) (30 ppm model) (302NT9312_) (35/40 ppm model)
6	Fuser motor	PARTS MOTOR-PM MOVING SP PARTS MOTOR-PM FUSER SP	303NB9404_ (30/35 ppm model) 302NT9414_ (40 ppm model)
7	Primary transfer motor	PARTS MOTOR-BL W20 SP	302K99432_
8	Duplex exit motor	PARTS MOTOR EJECT SP	302P79406_
9	Toner motor K	PARTS DC MOTOR ASSY SP	302NR9408_
10	Toner motor M	PARTS DC MOTOR ASSY SP	302NR9408_
11	Toner motor C	PARTS DC MOTOR ASSY SP	302NR9408_
12	Toner motor Y	PARTS DC MOTOR ASSY SP	302NR9408_
13	Polygon motor KM	- (LK-5270A) (LK-5290A)	- (302TV9301_) (30/35 ppm model) (302TX9301_) (40 ppm model)
14	Polygon motor CY	- (LK-5270B) (LK-5290B)	- (302TV9302_) (30/35 ppm model) (302TX9302_) (40 ppm model)
15	LSU cleaning motor	PARTS DC MOTOR ASSY SP	302NG9405_
16	Container fan motor	PARTS,FAN COOLING CONVEY- ING SP	302FZ9442_
17	LSU fan motor 1	PARTS FAN MOTOR SP	302NG9422_
18	LSU fan motor 2	PARTS FAN MOTOR SP	302NG9422_
19	Exit fan motor	PARTS,FAN COOLING CONVEY- ING SP	302FZ9442_
20	Power source fan motor	PARTS,FAN COOLING CONVEY- ING SP	302FZ9442_
21	Transfer fan motor	PARTS FAN MOTOR SP	302NG94220
22	Duplex fan motor*1	PARTS FAN MOTOR SP	302NG94220

\*1: 40 ppm model only

(4-7) Clutches and Solenoids and other parts

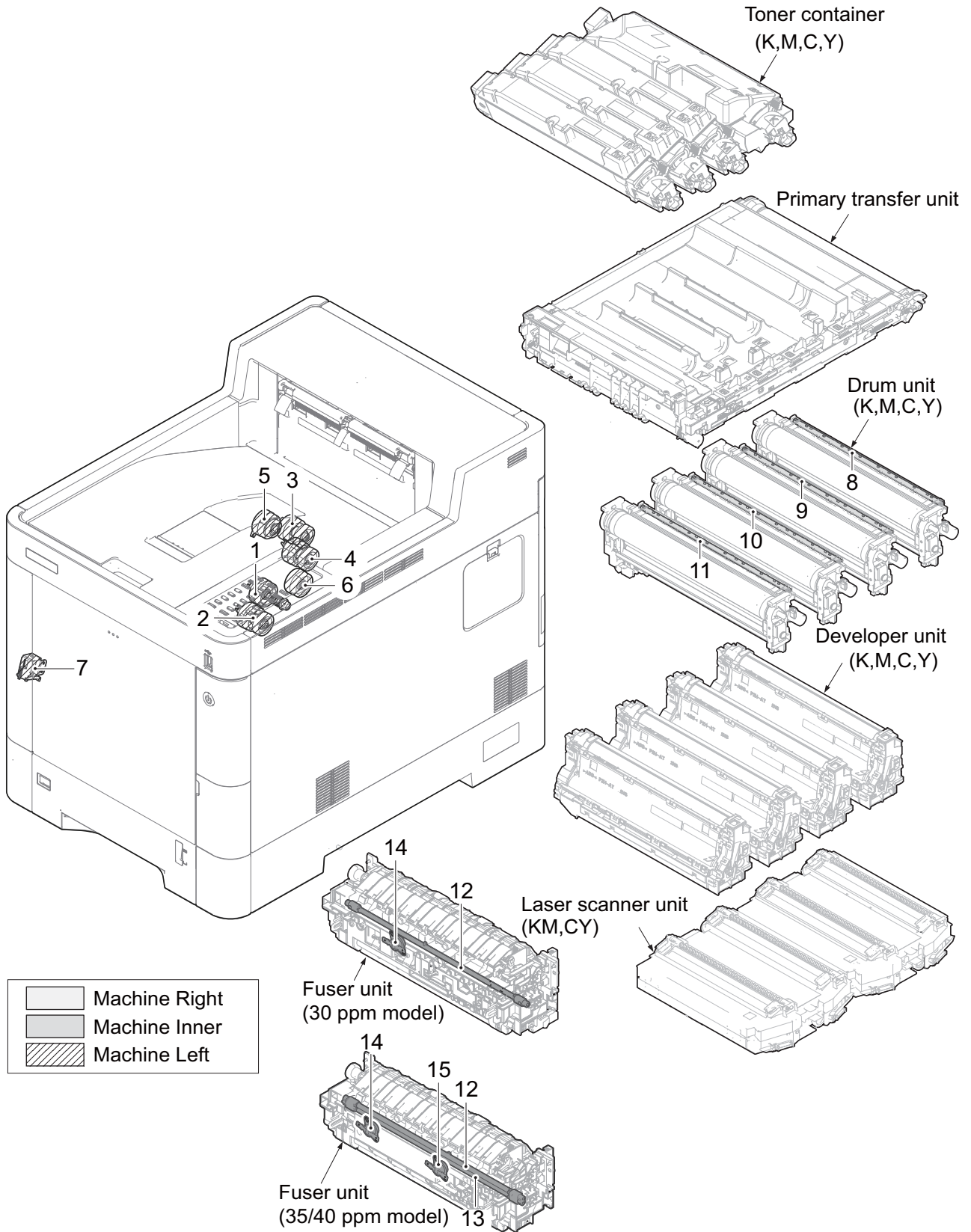


Figure 3-37

1. Paper feed clutch ..... Controlling the primary paper feeding from the cassette
2. MP conveying clutch ..... Controlling the drive for the MP conveying section
3. Registration clutch..... Controlling the drive for the secondary paper feeding
4. Middle clutch ..... Controlling the drive for the paper conveying section
5. Developer clutch ..... Controlling the drive to developer unit K
6. Duplex clutch\*1 ..... Controlling the drive to duplex section
7. MP solenoid ..... Controlling the MP lift plate
8. Cleaning lamp K..... Removing the remaining electric charge on the drum (Black)
9. Cleaning lamp M ..... Removing the remaining electric charge on the drum (Magenta)
10. Cleaning lamp C..... Removing the remaining electric charge on the drum (Cyan)
11. Cleaning lamp Y..... Removing the remaining electric charge on the drum (Yellow)
12. Fuser heater 1..... Heating the heat roller
13. Fuser heater 2\*1 ..... Heating the heat roller
14. Fuser thermostat 1 ..... Shutting off the power supply to the fuser heater when the abnormal high temperature on the heat roller is detected
15. Fuser thermostat 2\*1..... Shutting off the power supply to the fuser heater when the abnormal high temperature on the heat roller is detected

**(4-8) Part name table**

No.	Name used in service manual	Name used in parts list	Part.No.		
1	Paper feed clutch	PARTS CLUTCH 35 Z35R SP	302NR9401_		
2	MP conveying clutch	CLUTCH 50 Z35R	302KV4404_		
3	Registration clutch	PARTS CLUTCH 35 Z35R SP	302NR9401_		
4	Middle clutch	PARTS CLUTCH 35 Z35R SP	302NR9401_		
5	Developer clutch	PARTS CLUTCH 35 Z35R SP	302NR9401_		
6	Duplex clutch*1	PARTS CLUTCH 35 Z35R SP	302NR9401_		
7	MP solenoid	SOLENOID TONER	302GR4415_		
8	Cleaning lamp K	-	-		
9	Cleaning lamp M				
10	Cleaning lamp C				
11	Cleaning lamp Y				
12	Fuser heater 1	-	-		
13	Fuser heater 2*1				
14	Fuser thermostat 1				
15	Fuser thermostat 2*1			(FK-5141)	(302NR9310_) (30 ppm model)
				(FK-5142)	[100V]
		(FK-5140)	(302NR9311_) (30 ppm model)		
		(FK-5151)	[120V]		
	(FK-5152)	(302NR9309_) (30 ppm model)			
	(FK-5150)	[230V]			
	(FK-5291)	(302PB9310_) (35 ppm model)			
	(FK-5292)	[100V]			
	(FK-5290)	(302PB9311_) (35 ppm model)			
		[120V]			
		(302PB9309_) (35 ppm model)			
		[230V]			
		(302TX9305_) (40 ppm model)			
		[100V]			
		(302TX9304_) (40 ppm model)			
		[120V]			
		(302TX9303_) (40 ppm model)			
		[230V]			

\*1: 35/40 ppm model

### (4-9) Paper feeder (Optinal unit)

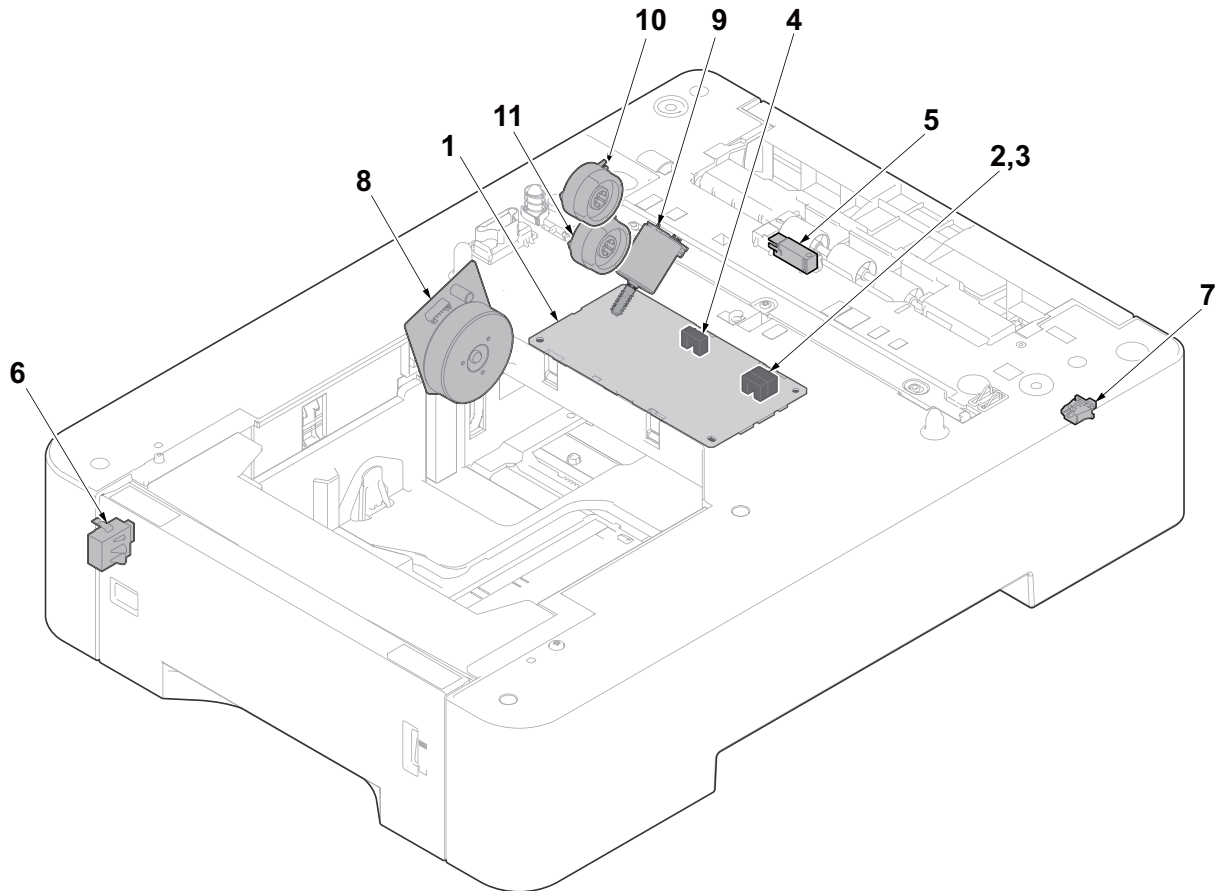


Figure 3-38 ?

- 1.PF main PWBInterfacing to the main unit and controlling the entire paper feeder
- 2.PF paper sensor 1Detecting the level of the remaining paper inside the cassette
- 3.PF paper sensor 2Detecting the level of the remaining paper inside the cassette
- 4.PF lift sensorDetecting the upper limit when lifting the lift plate inside the cassette
- 5.PF feed sensorDetecting the paper jam at the paper feeder
- 6.PF cassette size switchDetecting the paper size setting by the size dial
- 7.PF rear cover switchConsisting of the safety circuit when opening and closing the PF rear cover 2-4
- 8.PF feed motorDriving the paper feeding system
- 9.PF lift motorOperating the lift plate inside the cassette
- 10.PF feed clutchControlling the timing for the paper feeding
- 11.PF conveying clutchControlling the paper conveying

**(4-10) Part name table**

No.	Name used in service manual	Name used in parts list	Part.No.
1	PF main PWB	-	-
2	PF paper sensor 1		
3	PF paper sensor 2		
4	PF lift sensor		
5	PF feed sensor	PARTS SENSOR OPT. SP	303NW9406_
6	PF cassette size switch	SWITCH SIZE	302HN4418_
7	PF rear cover switch	SW.PUSH	7SP01000004+H01
8	PF paper feed motor	-	-
9	PF lift motor		
10	PF paper feed clutch		
11	PF conveying clutch		
		(PARTS PWB ASSY PF MAIN SP)	(303PK9401_)
		(PARTS DRIVE UNIT SP)	(303PK9402_)

## (5) Drive unit

### (5-1) Wire connection

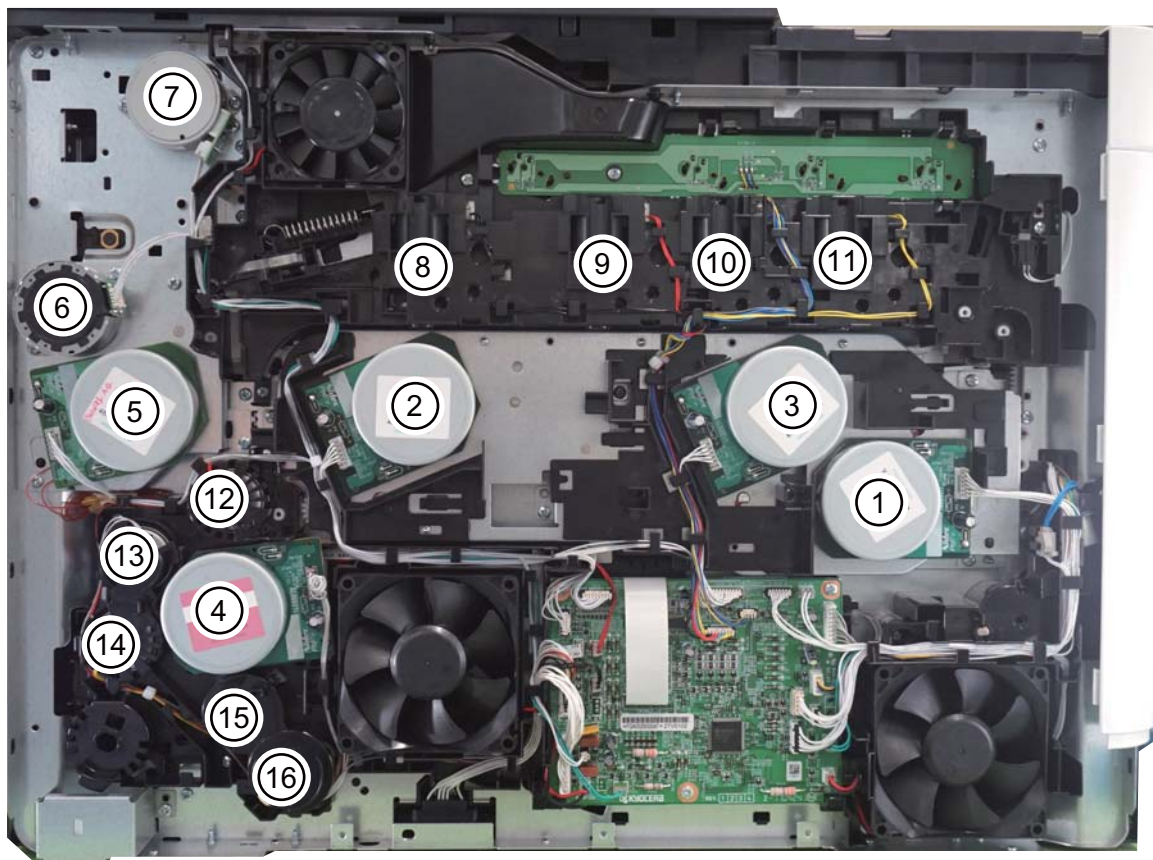


Figure 3-39

- |                              |                         |
|------------------------------|-------------------------|
| 1. Developer motor           | 10. Toner motor C       |
| 2. Drum motor 1              | 11. Toner motor Y       |
| 3. Drum motor 2              | 12. Developer clutch    |
| 4. Conveying developer motor | 13. Registration clutch |
| 5. Primary transfer motor    | 14. Middle clutch       |
| 6. Fuser motor               | 15. Duplex clutch*1     |
| 7. Duplex exit motor         | 16. Paper feed clutch   |
| 8. Toner motor K             | 17. MP conveying clutch |
| 9. Toner motor M             |                         |

\*1: 35/40 ppm model



### (5-2) Drive system for the paper conveying

30 ppm model

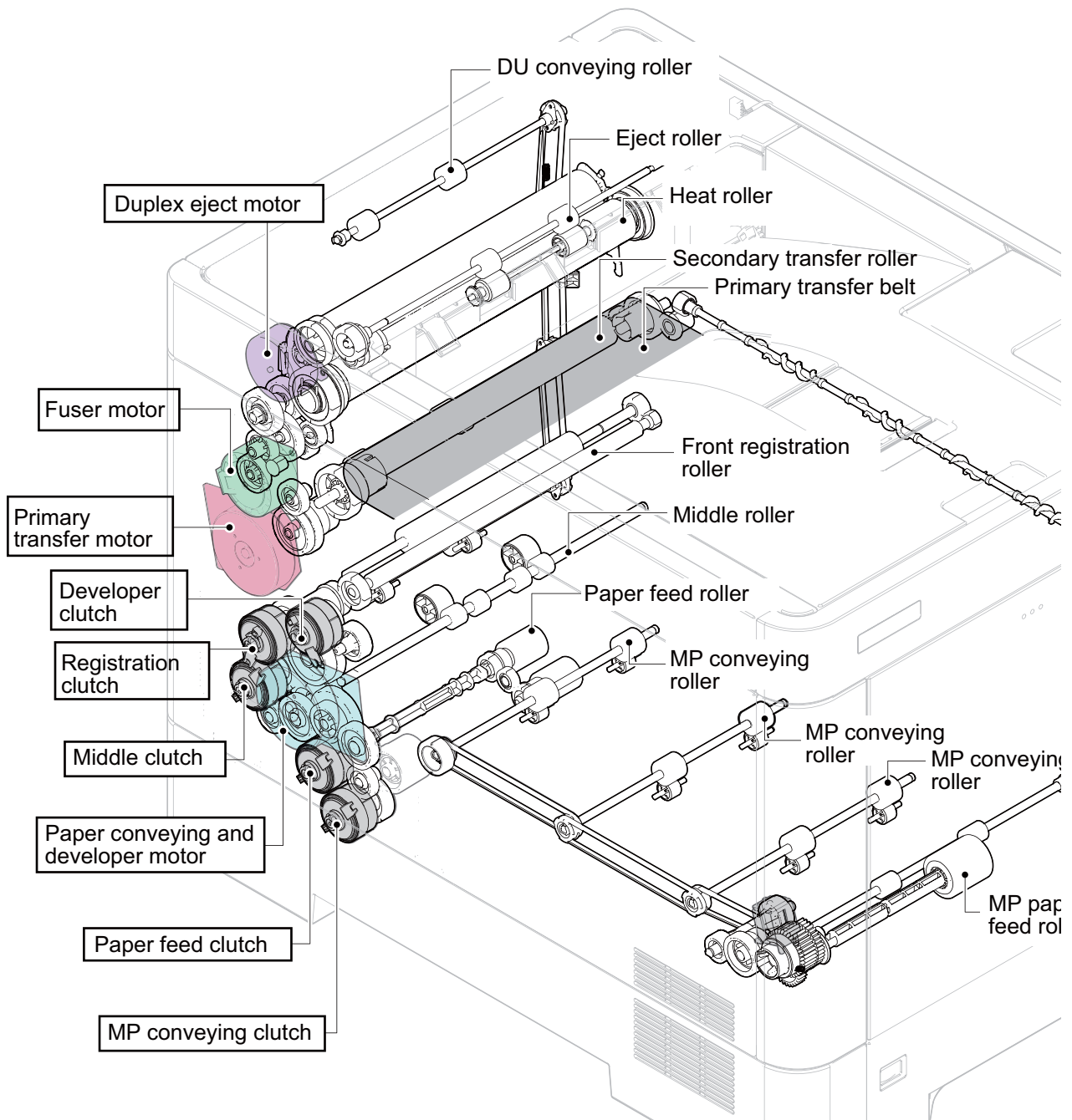


Figure 3-40

35/40 ppm model

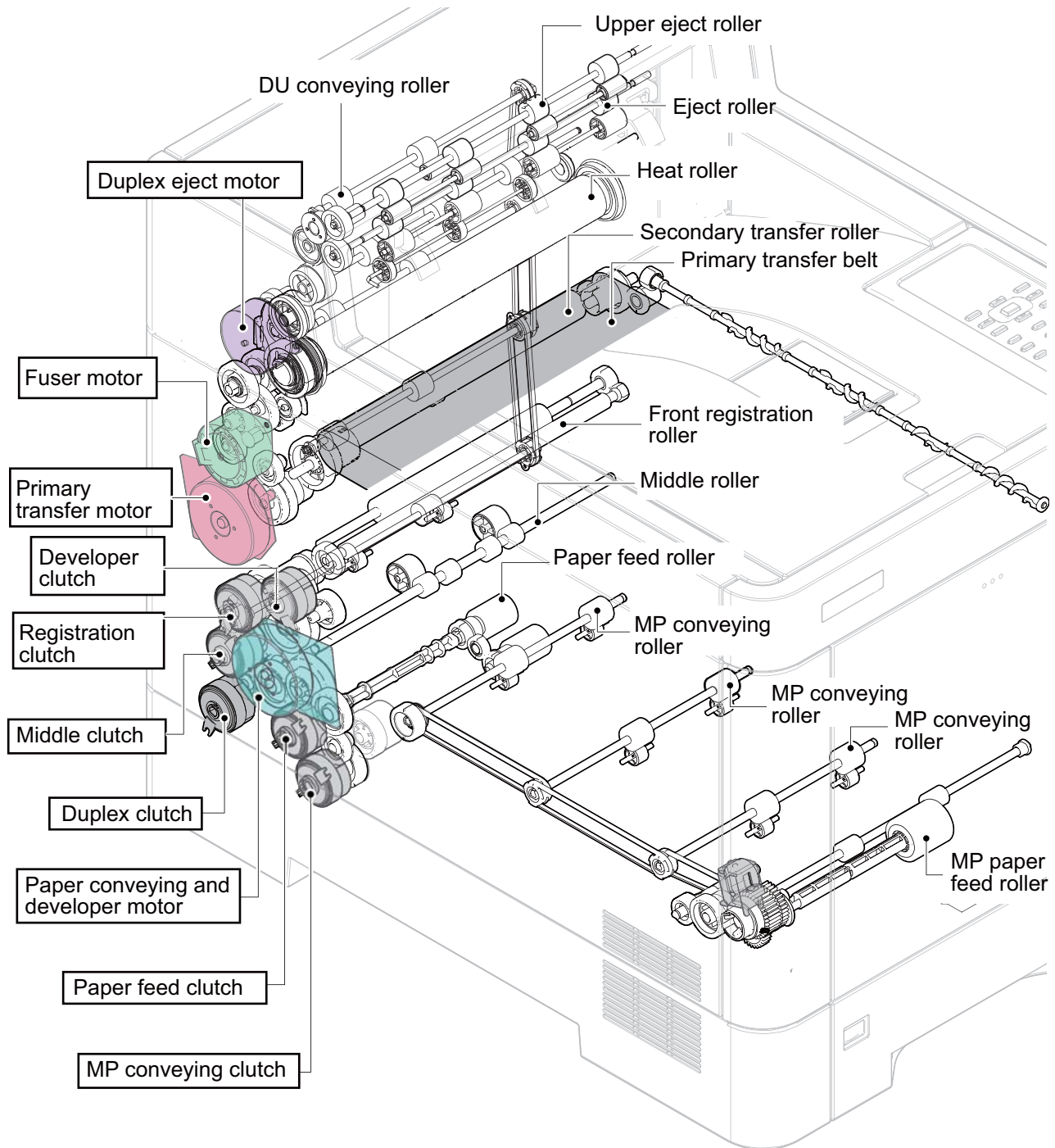


Figure 3-41

(5-3) Unit Design

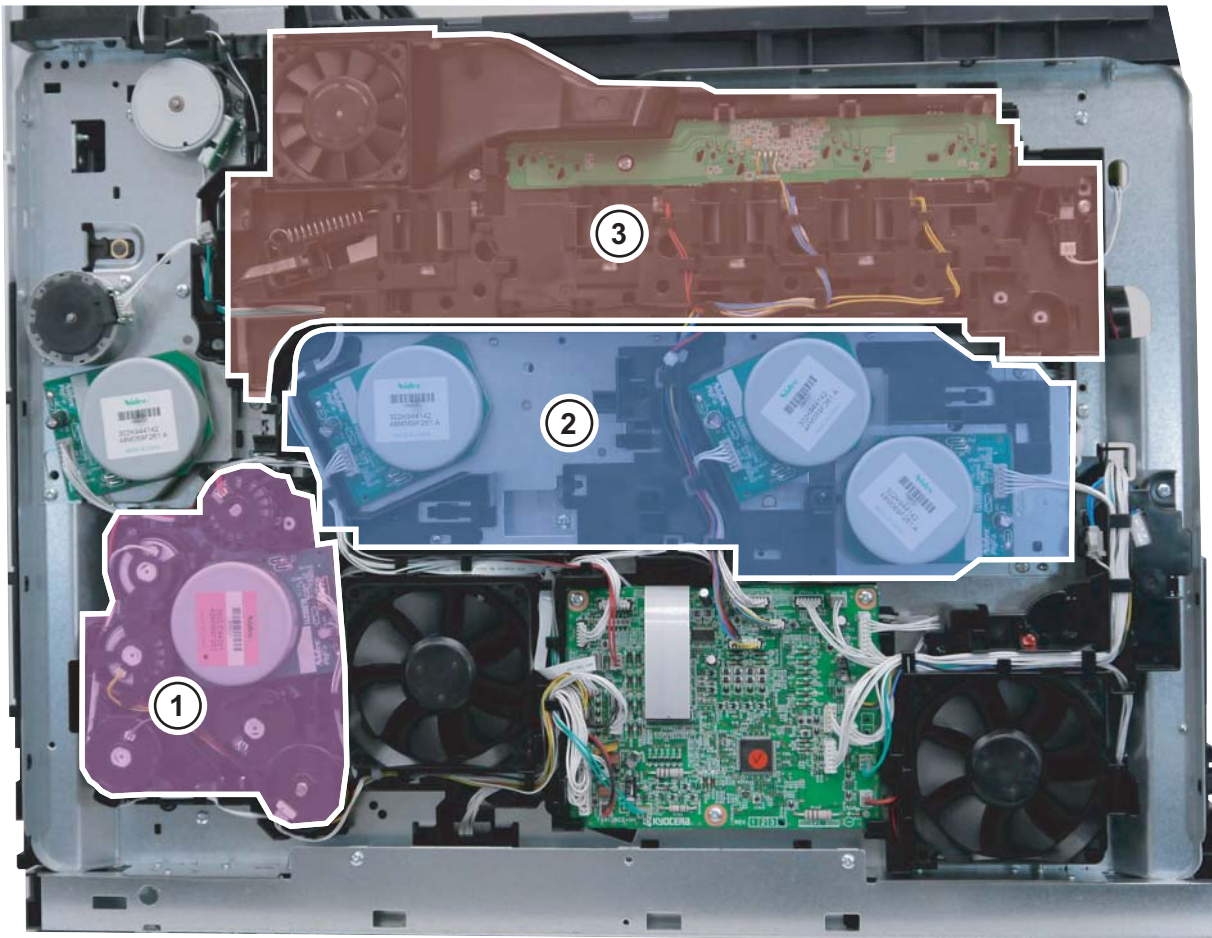


Figure 3-42

1. Paper conveying and Developer K drive section

2. Main drive motor section  
3. Toner motor section

1. Paper conveying and Developer K drive section

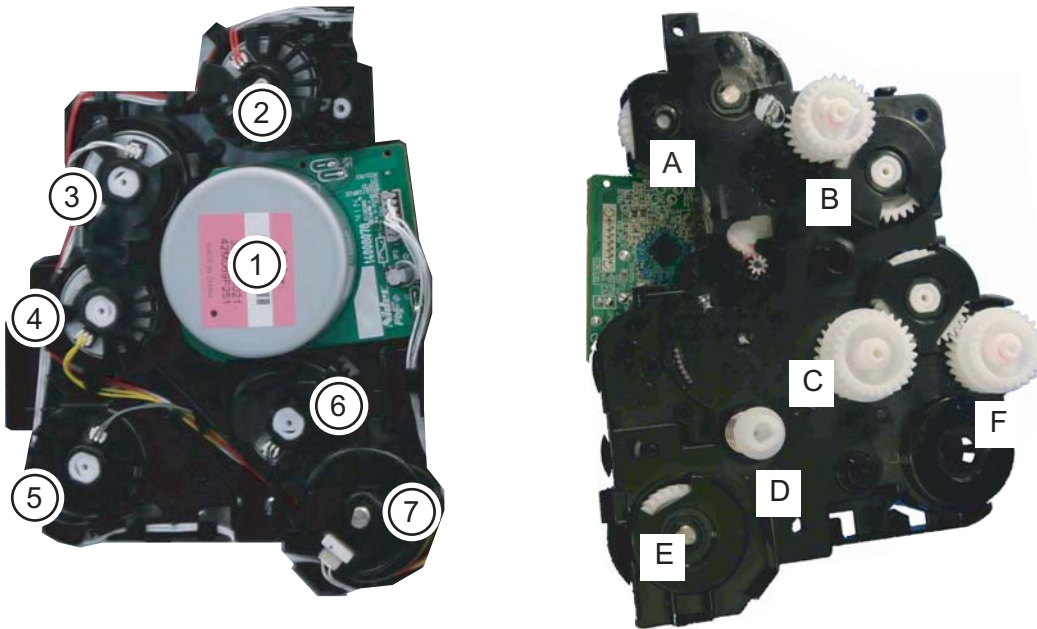


Figure 3-43

- 1. Conveying developer motor
- 2. Developer clutch
- 3. Registration clutch
- 4. Middle clutch
- 5. Duplex clutch\*1
- 6. Paper feed clutch
- 7. MP conveying clutch

\*1: 35/40 ppm model only

- A. Joint gear (Developer unit K: Clutch 2)
- B. Joint gear (Registration roller: Clutch 3)
- C. Joint gear (Middle roller: Clutch 4)
- D. Joint coupling (Paper feed roller: Clutch 5)
- E. Joint gear (MP conveying roller: Clutch 6)
- F. Joint gear (DU conveying roller: Clutch 4) 30 ppm model  
Joint gear (DU conveying roller: Clutch 5) 35/40 ppm model



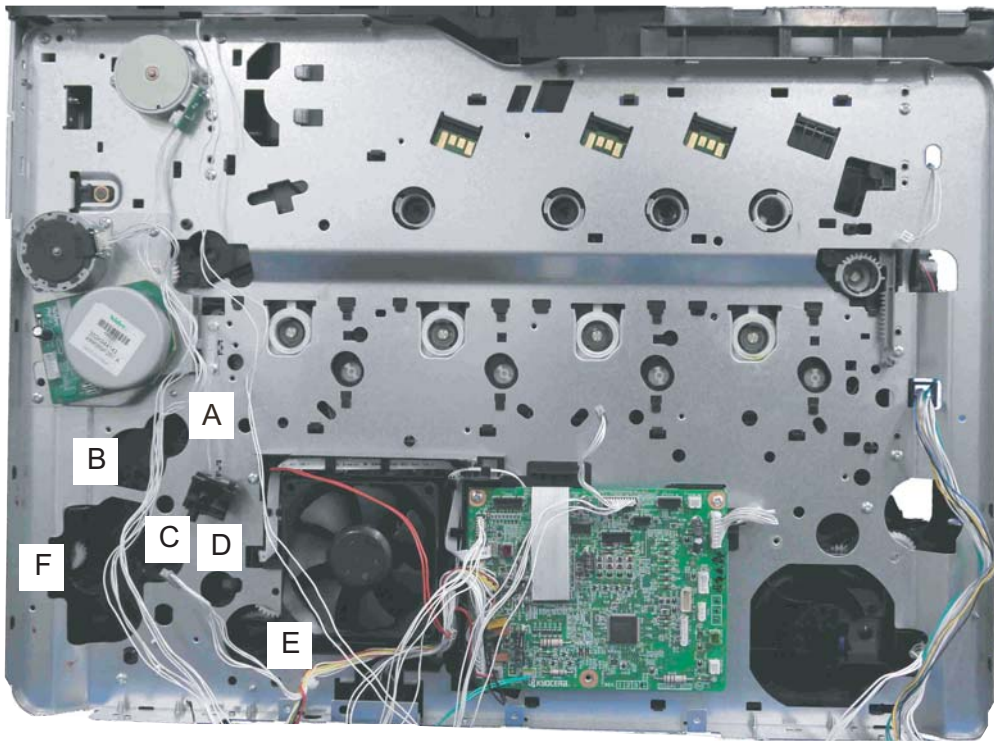


Figure 3-44

Name used in service manual	Name used in parts list	Part.No.
Paper conveying drive unit	PARTS FEED DRIVE ASSY SP	302NR9426_ (30 ppm model)
		302NT9408_ (35/40 ppm model)

2. Main drive motor section

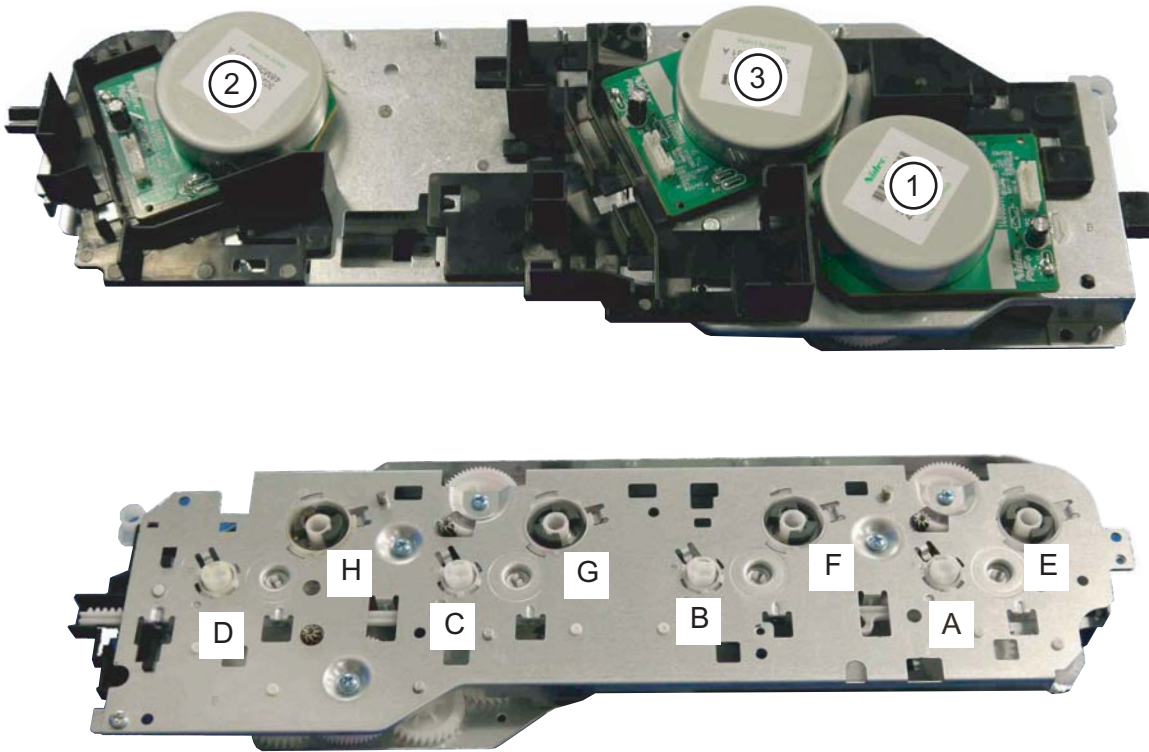


Figure 3-45 Main drive motor unit

1. Developer motor (Driving developer unit C, M and Y)
2. Drum motor 1 (Driving drum unit K and M)
3. Drum motor 2 (Driving drum unit C and Y)

- A. Developer drive coupling K (Driving developer unit K)
- B. Developer drive coupling M (Driving developer unit M)
- C. Developer drive coupling C (Driving developer unit C)
- D. Developer drive coupling Y (Driving developer unit Y)
- E. Drum drive coupling K (Driving drum unit K)
- F. Drum drive coupling M (Driving drum unit M)
- G. Drum drive coupling C (Driving drum unit C)
- H. Drum drive coupling Y (Driving drum unit Y)

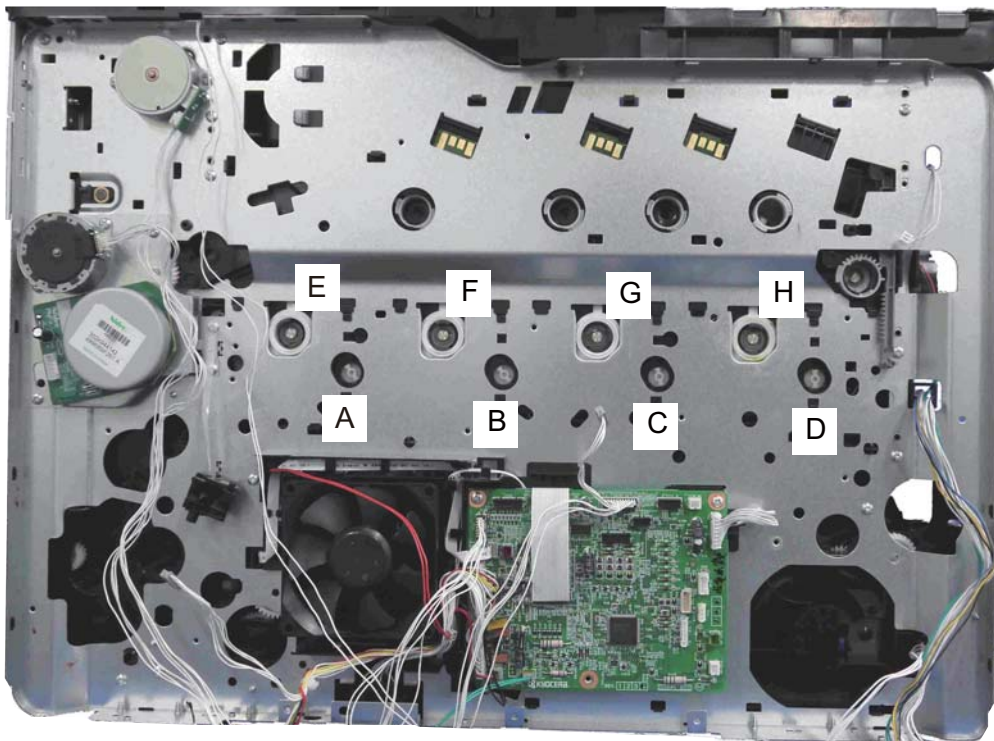


Figure 3-46

Name used in service manual	Name used in parts list	Part.No.
Main drive motor unit	DR-5140	302NR9313_ (30 ppm model)
	DR-5150	302NT9312_ (35 ppm model)
	DR-5160	302NT9321_ (40 ppm model)

### 3. Toner motor section

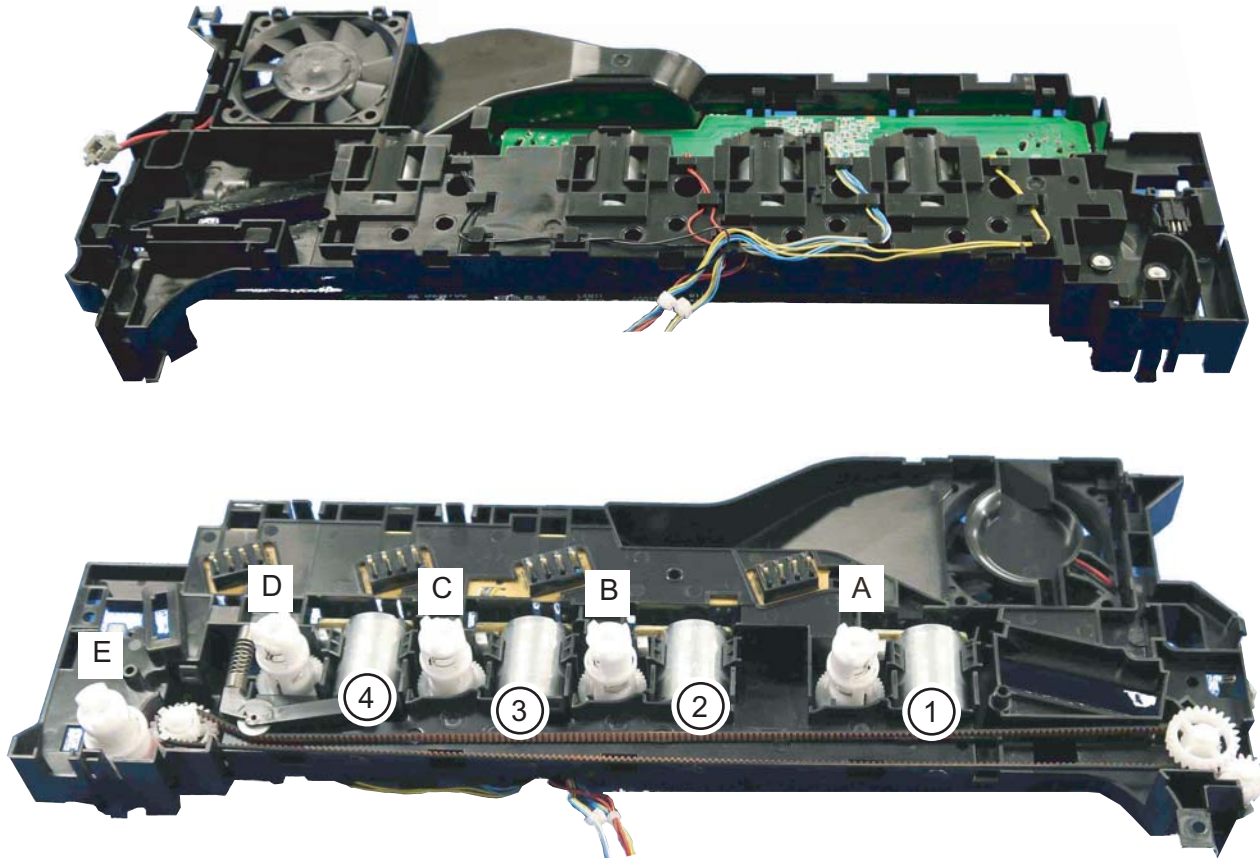


Figure 3-47

1. Toner motor K (Driving toner container K)
  2. Toner motor M (Driving toner container M)
  3. Toner motor C (Driving toner container C)
  4. Toner motor Y (Driving toner container Y)
- 
- A. Container drive coupling K (Driving toner container K)
  - B. Container drive coupling M (Driving toner container M)
  - C. Container drive coupling C (Driving toner container C)
  - D. Container drive coupling Y (Driving toner container Y)
  - E. Transfer cleaning drive coupling (Primary transfer cleaning drive)



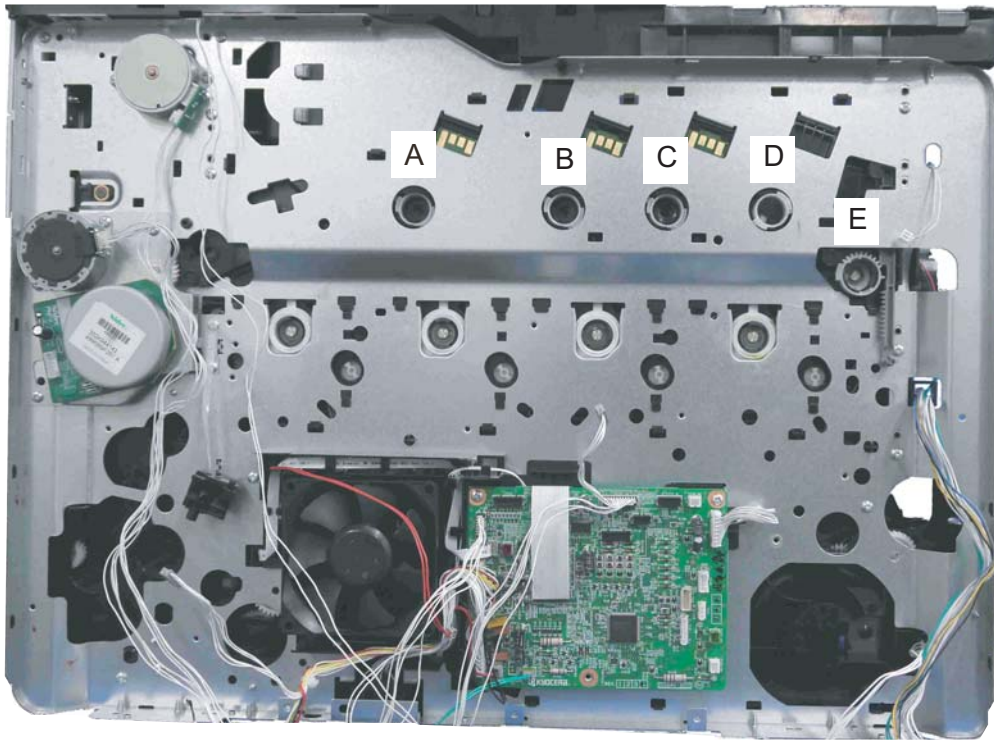


Figure 3-48

### 3-3 Paper feed and conveying section

The paper feed and conveying section consists of the cassette paper feed section and the MP tray paper feed section, and the paper conveying section conveying the fed paper to the transfer and separat

#### (1) Cassette paper feed section

The cassette can load 500 sheets of plain paper (80g/m<sup>2</sup>). And forwards the paper by rotating the pickup roller and conveys the paper to the conveying section by rotating the feed roller.

#### [Components parts]

1. Paper feed roller
2. Pickup roller
3. Paper feed holder
4. Retard roller
5. Retard holder
6. Separation pad
7. Lift plate
8. Paper width guides
9. Paper length guide
10. Cassette base
11. Actuator  
(Paper sensor 1, 2)

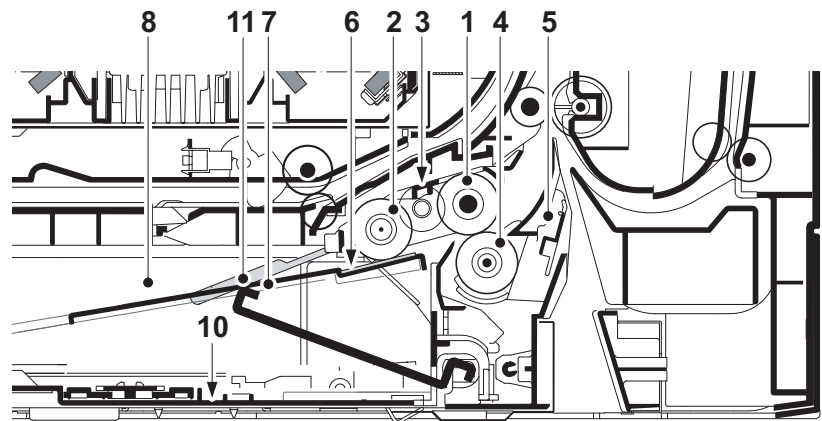


Figure 3-49

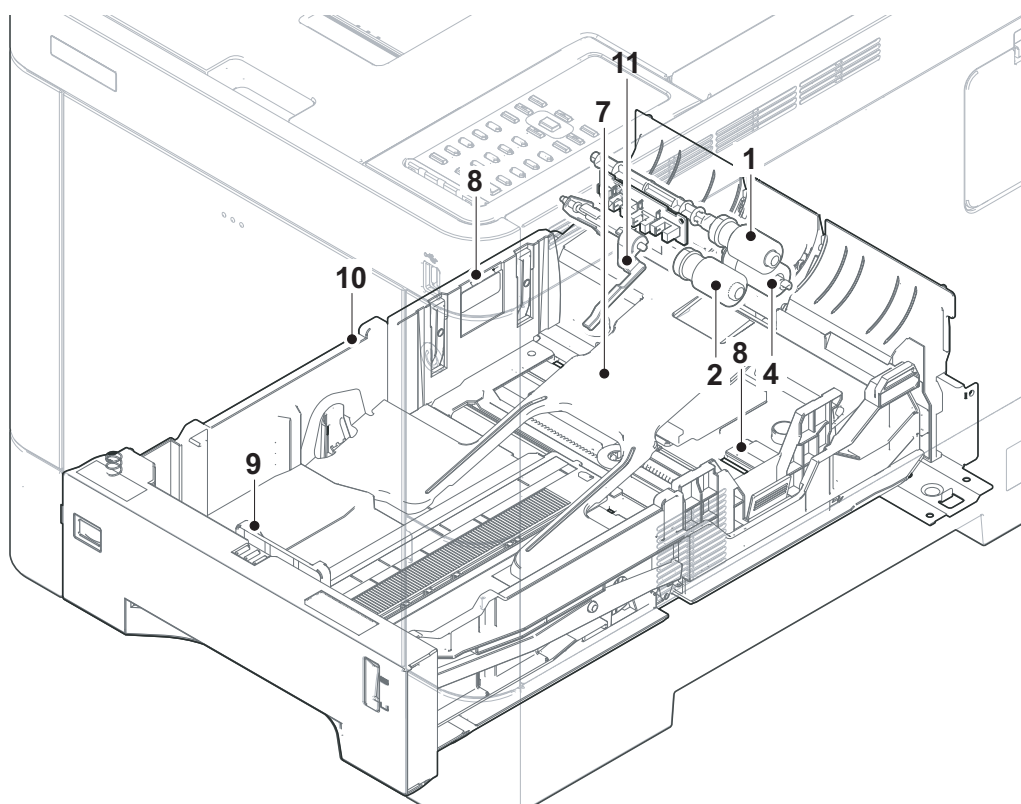


Figure 3-50

[Control block diagram]

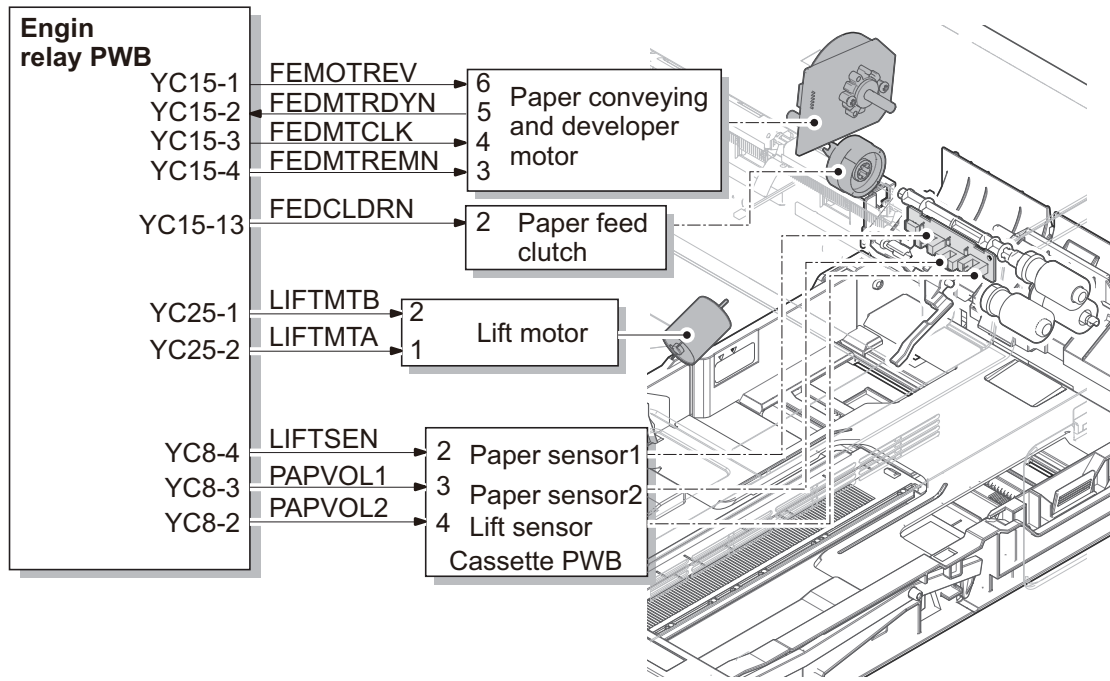


Figure 3-51

## (2) MP tray paper feed section

The MP tray can load 100 sheets of plain paper (80g/m<sup>2</sup>). The paper on the MP tray is fed by rotating the MP feed roller and operating the MP lift plate according to the MP solenoid. Multi-feeding is prevented by the effect of the MP separation pad.

### [Components parts]

1. MP feed roller
2. MP separation pad
3. MP lift plate
4. MP separation pad
5. MP conveying roller
6. MP conveying pulley
7. MP paper width guides
8. MP base
9. MP cover
10. MP tray
11. Actuator  
(MP paper sensor )

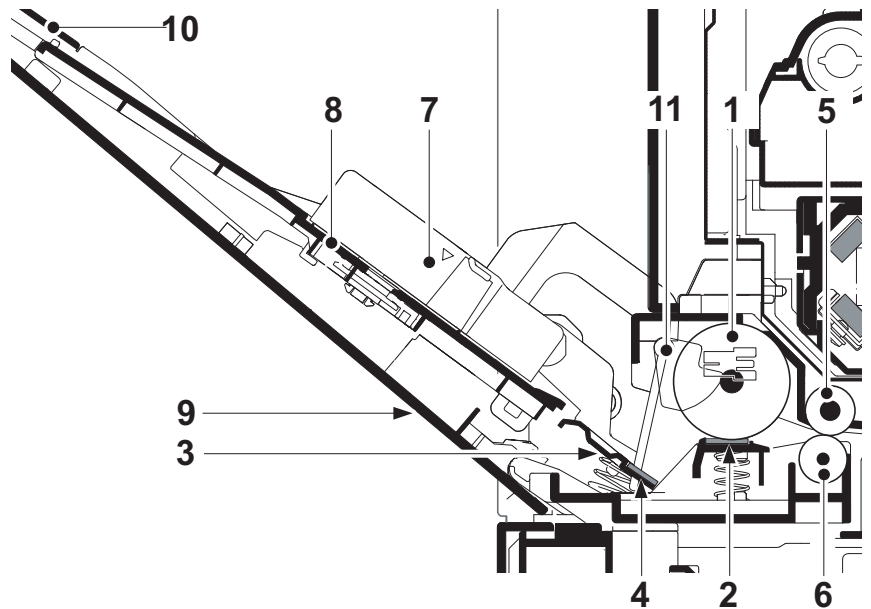


Figure 3-52

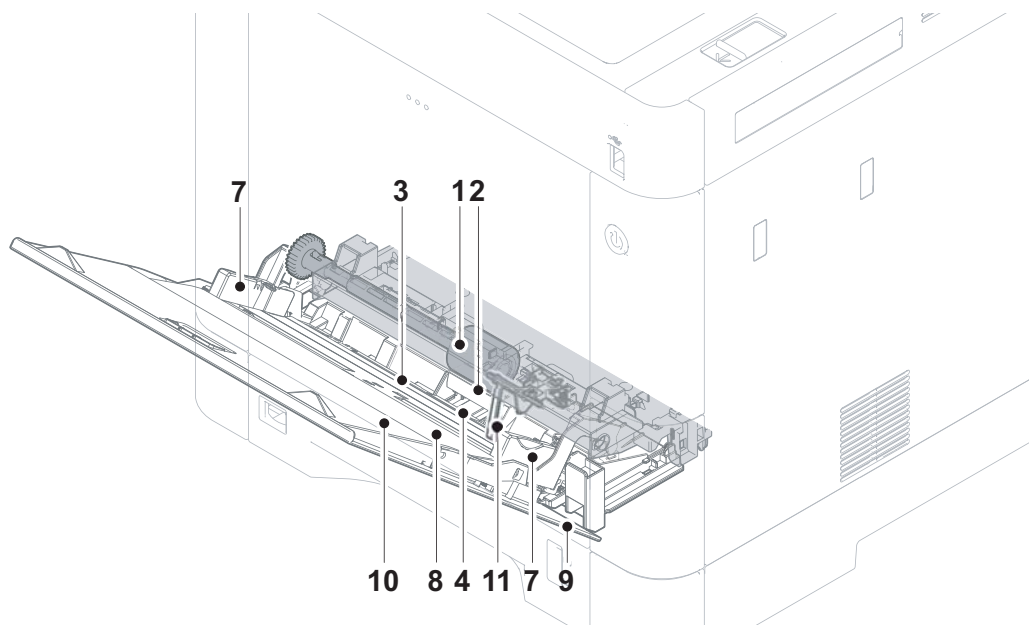


Figure 3-53

[Control block diagram]

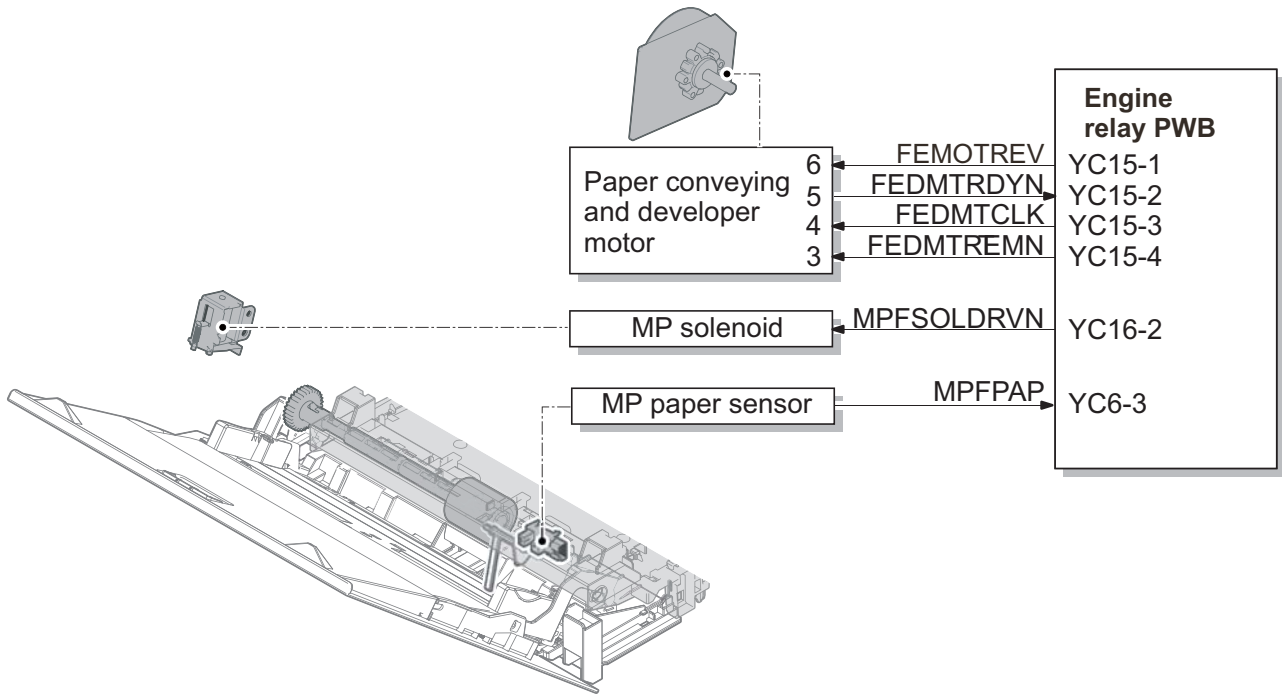


Figure 3-54

### (3) Conveying section

The paper conveying section conveys paper to the transfer and separation section when the paper is fed from the cassette or the MP tray, or re-fed in the duplex print. The fed paper is conveyed to where it turns the registration sensor on by the middle roller or the MP conveying roller, and then, conveyed to the transfer and separation section by the registration front and rear rollers.

#### [Components parts]

1. MP conveying roller
2. MP conveying pulley
3. Upper MP conveying guide
4. Lower MP conveying guide
5. Middle roller
6. Middle pulley
7. Front registration roller
8. Rear registration roller
9. MP conveying sensor
10. Actuator  
(MP conveying sensor)
11. Registration sensor

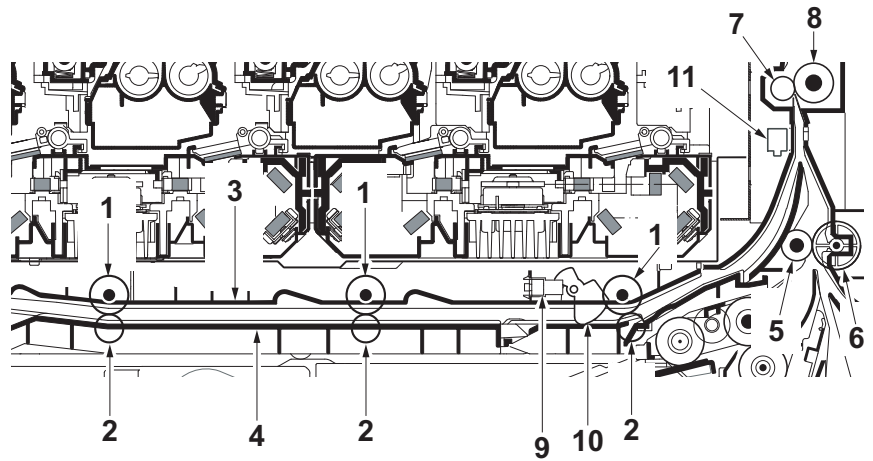


Figure 3-55

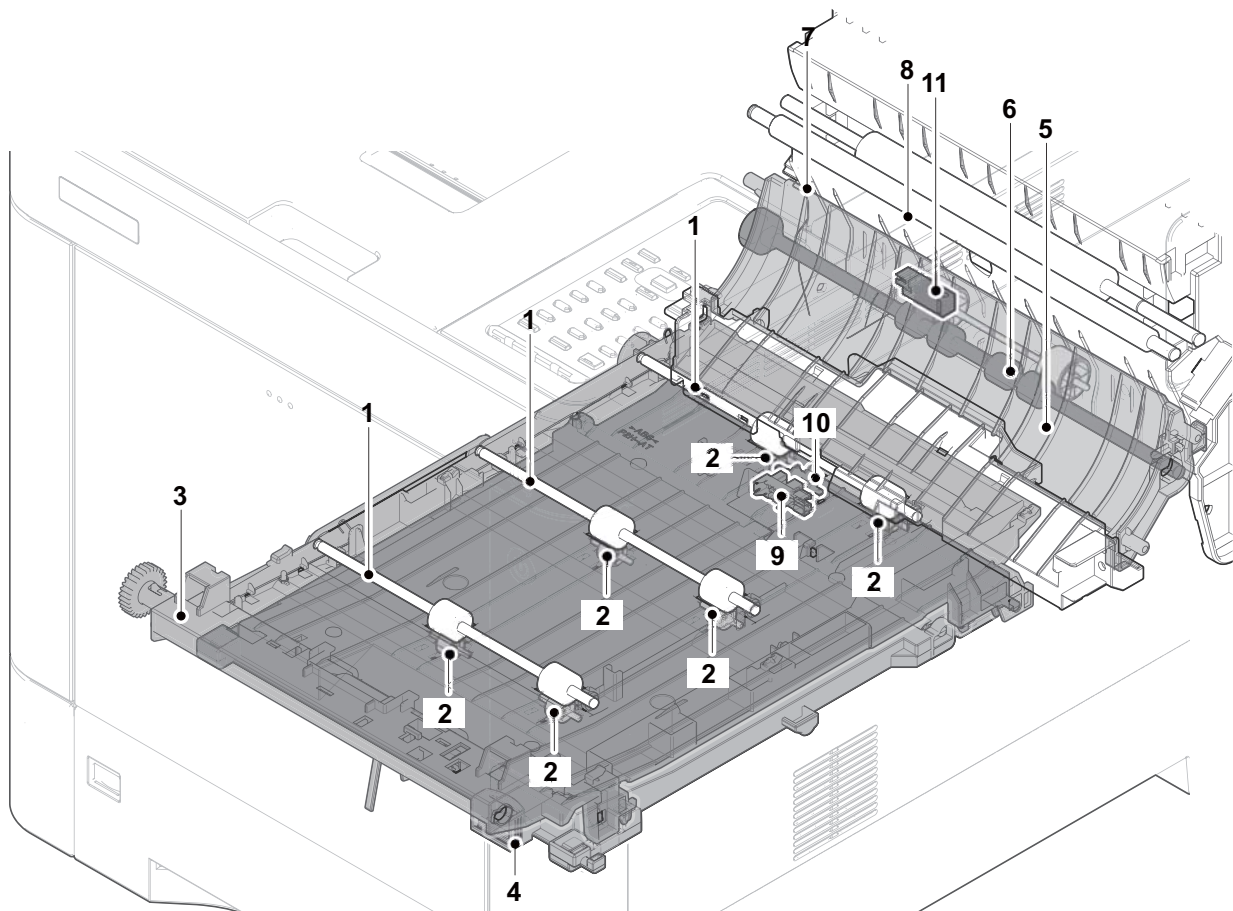


Figure 3-56

[Control block diagram]

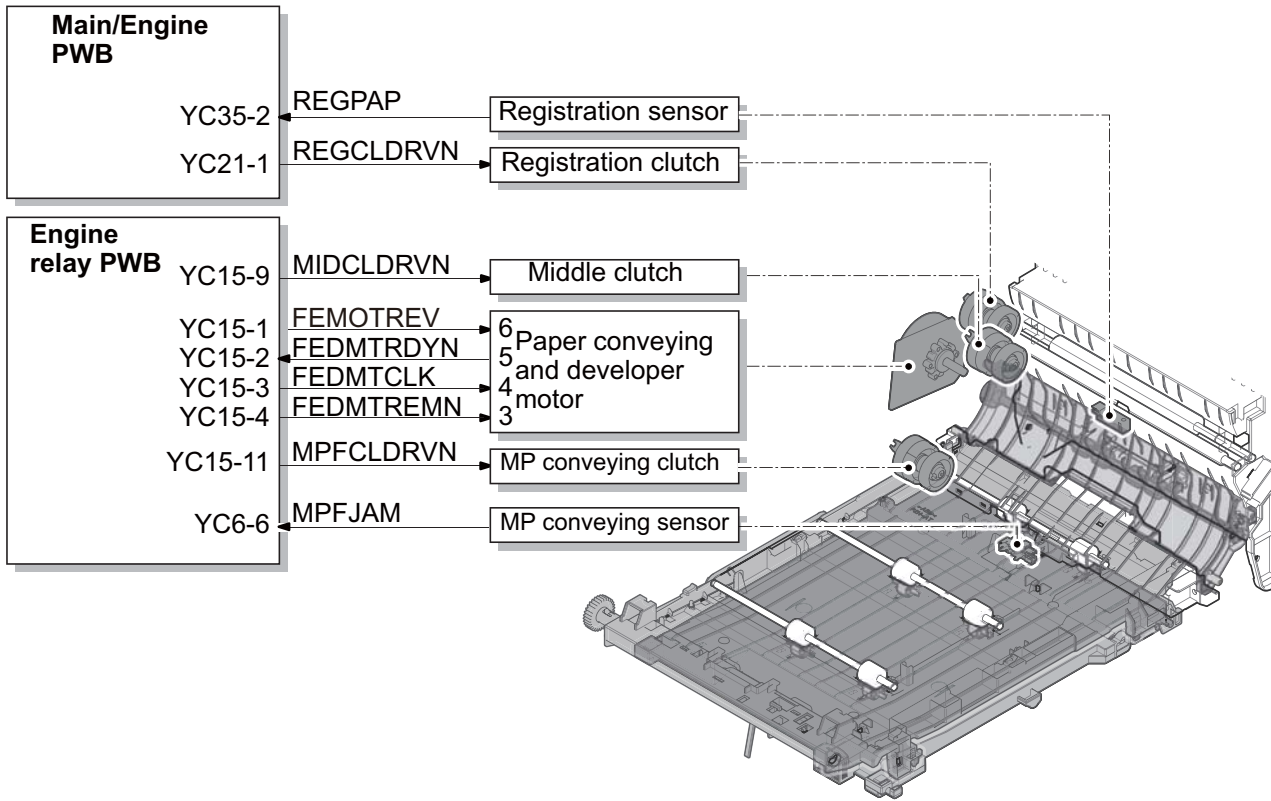


Figure 3-57



### 3-4 Optical section

The optical section consists of the laser scanner section to write the image.

#### (1) Laser scanner unit

The charged drum surface is scanned by the laser emitted from the laser scanner units. The laser reflects to the polygon mirrors by rotating the polygon motor so that the laser scans horizontally to the image. The laser scanner unit has some lenses and mirrors, that adjust the diameter of the laser to focus the laser to the drum surface. Also, the LSU cleaning motor operates to automatically clean the LSU glass.

#### [Components parts]

1. Polygon motor
2. Polygon mirror
3. f $\theta$  lens A
4. f $\theta$  lens B
5. Mirror A
6. Mirror B
7. Mirror C
8. LSU glass
9. Spiral

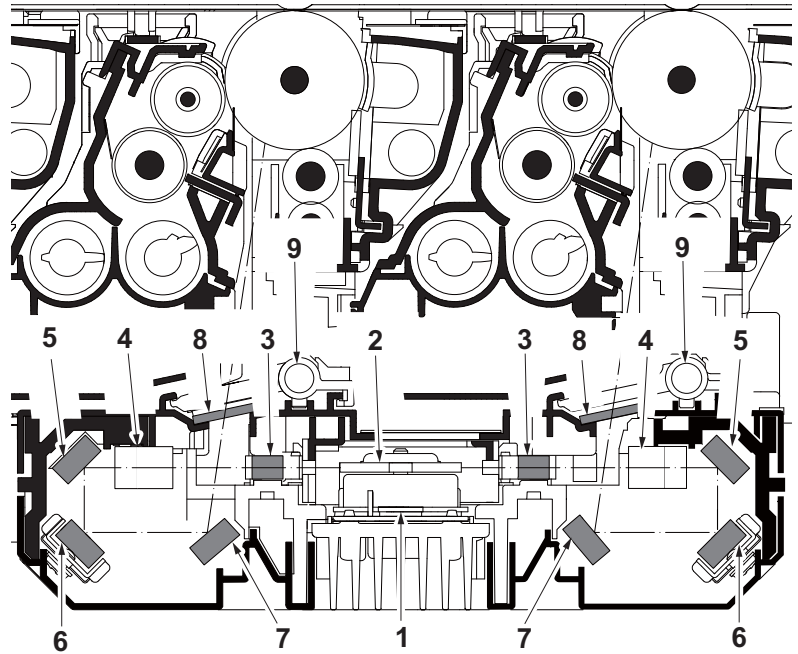


Figure 3-58

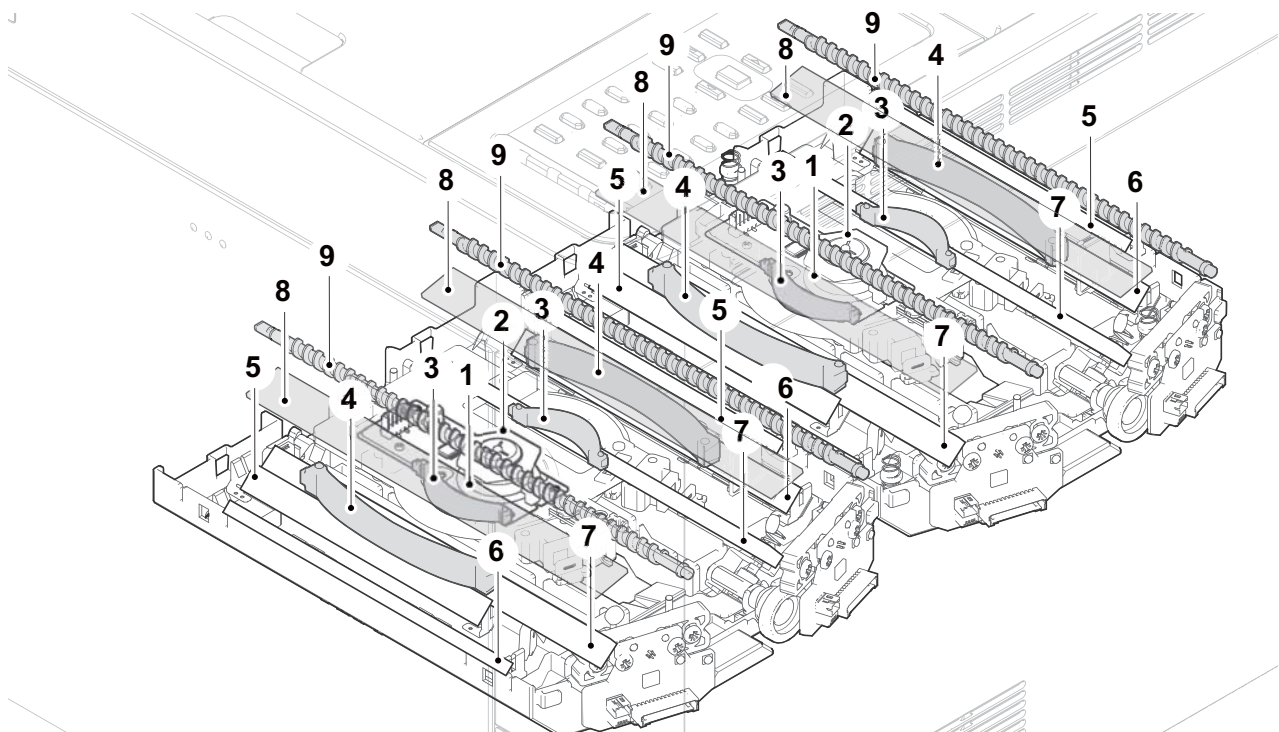


Figure 3-59





## 3-5 Developer section

### (1) Developer unit

The developer section consists of the magnet roller forming the magnetic brush, the sleeve roller forming the thin layer by replacing the toner, the developer blade, and the developer screw mixing up the toner. The toner density is adjusted by impressing the bias to the magnet roller and the sleeve roller. The toner amount inside the developer unit is detected by the toner sensor.

#### [Components parts]

1. Sleeve roller
2. Magnet roller
3. Developer screw A
4. Developer screw B
5. Developer blade
6. Developer case
7. Developer top cover
8. Developer base
9. Toner sensor

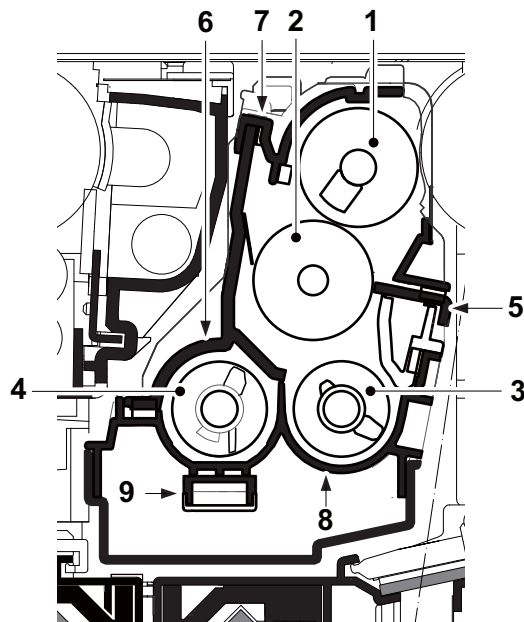


Figure 3-61

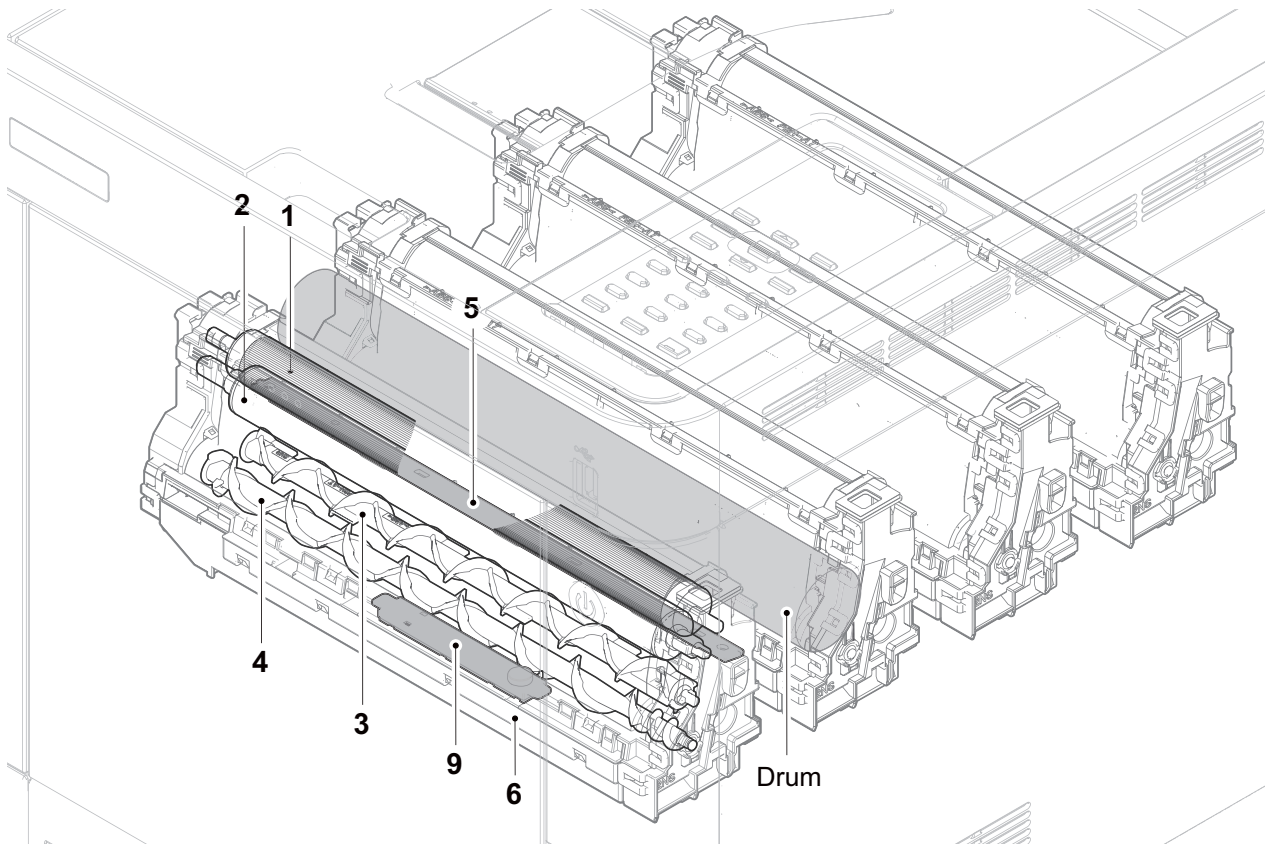


Figure 3-62

[Control block diagram]

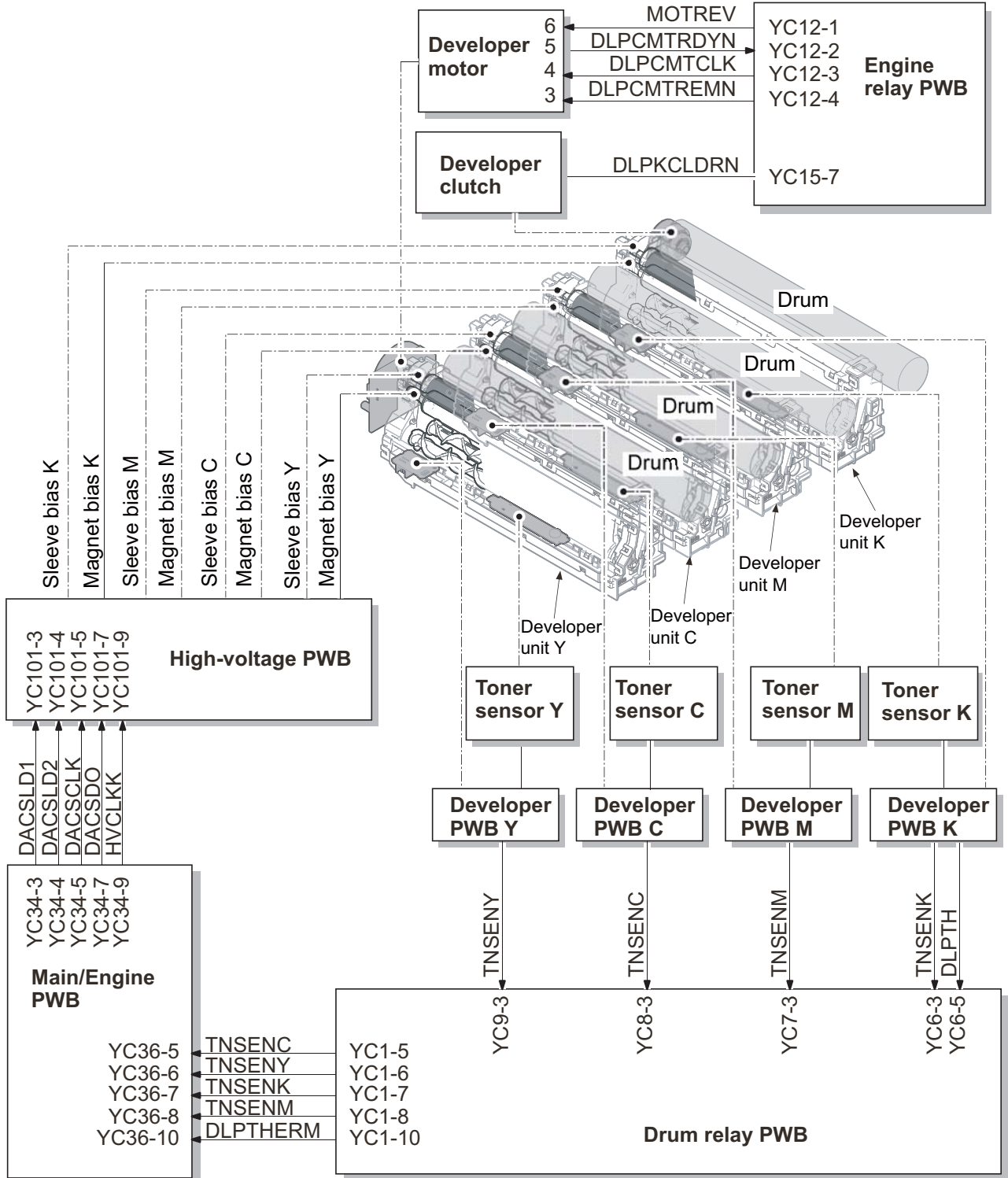


Figure 3-63

## 3-6 Drum section

The drum section consists of the drum, the charger roller unit, and the cleaning unit. The drum surface is evenly charged to prepare forming the electrical latent image by emitting the laser.

### (1) Charger roller unit

The charged roller with the electric charge contacts the drum surface and rotates to charge the drum evenly.

#### [Components parts]

1. Drum
2. Charger roller
3. Charger cleaning roller
4. Charger case

### (2) Cleaning unit

The remaining toner on the drum surface after transferring is removed by the cleaning blade, and collected to the waste toner box by the drum screw. The cleaning lamp consists of the LED lamp, and it removes the remaining electric charge on the drum before the main charge.

#### [Components parts]

5. Drum frame
6. Cleaning blade
7. Drum screw
8. Cleaning lamp

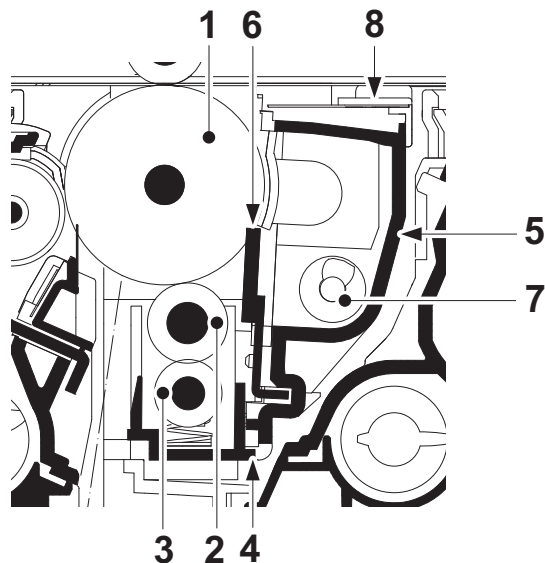


Figure 3-64

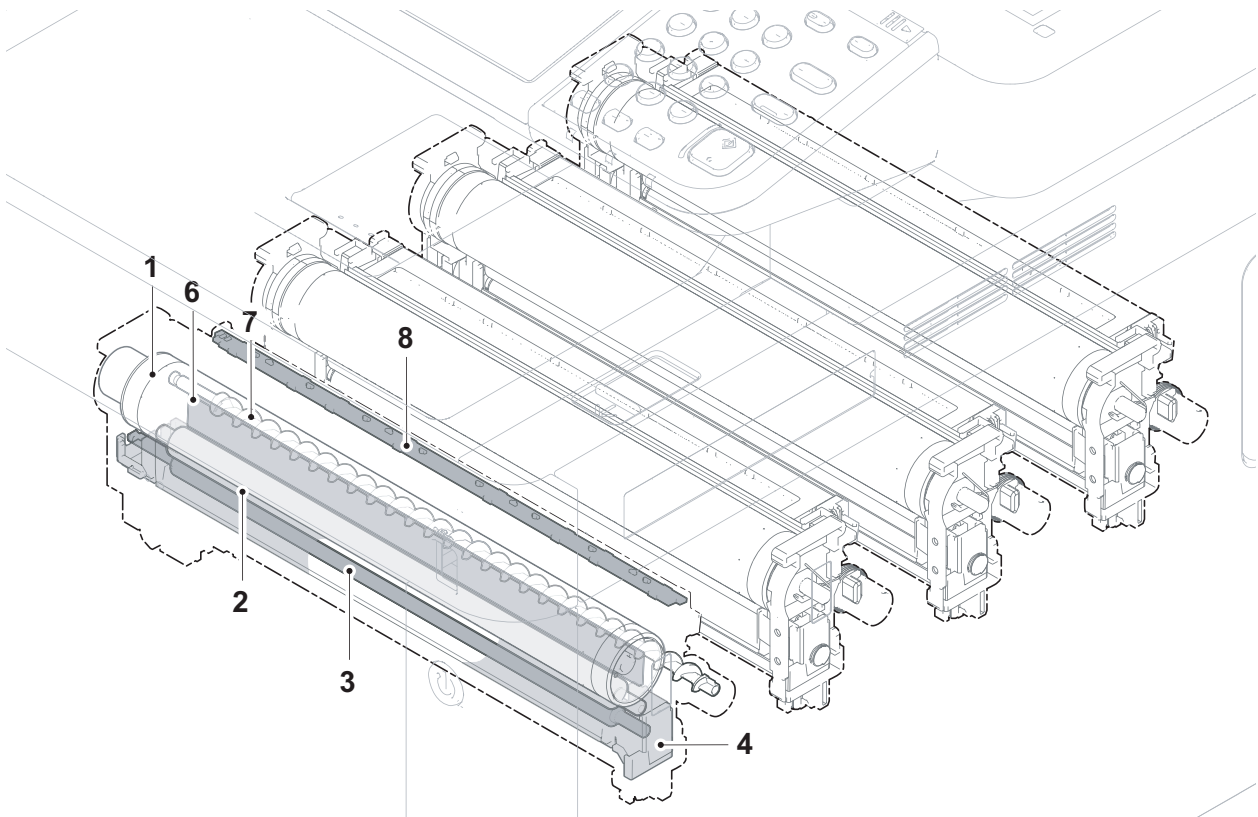


Figure 3-65

[Control block diagram]

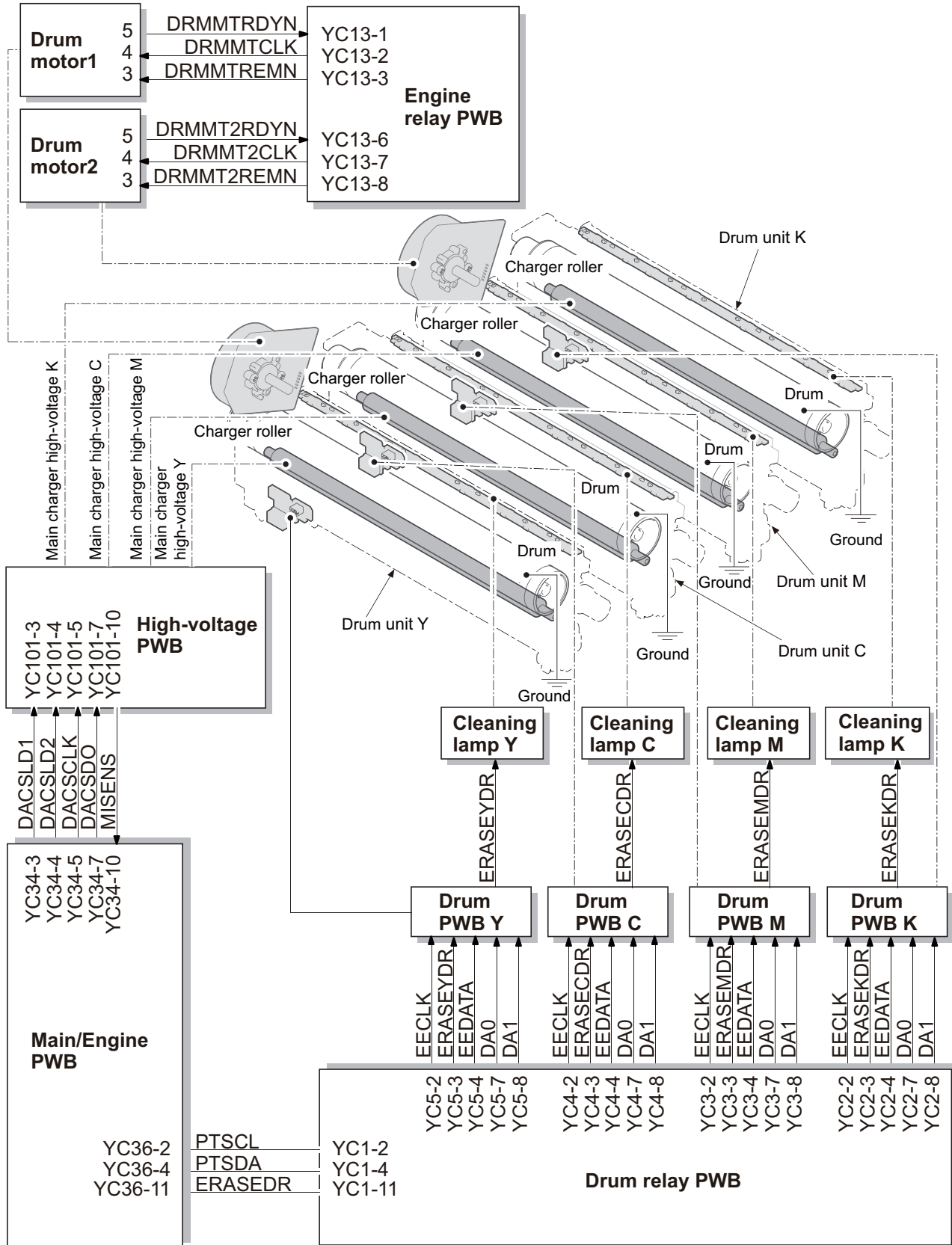


Figure 3-66



## 3-7 Transfer and separation section

### (1) Primary transfer unit

The primary transfer section consists of the transfer cleaning unit, the transfer belt and four primary transfer rollers facing each drum. When printing the color image, the toner image with a single color formed on each drum is repeatedly transferred on the transfer belt by impressing the bias to the primary transfer rollers facing each drum, and then the full color toner image is formed. Also, the ID sensor attached to the main unit measures the toner density on the transfer belt.

The transfer cleaning unit collects the remaining toner on the transfer belt after the secondary transferring, and forwards it to the waste toner box as waste toner.

#### [Components parts]

1. Tension roller
2. Drive roller
3. Primary transfer roller K
4. Primary transfer roller M
5. Primary transfer roller C
6. Primary transfer roller Y
7. Transfer belt
8. Cleaning fur brush
9. Cleaning roller
10. Cleaning blade
11. Cleaning screw
12. ID sensor 1
13. ID sensor 2

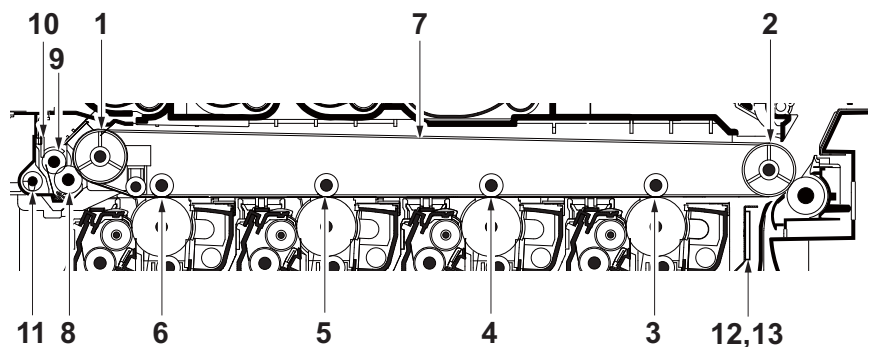


Figure 3-67

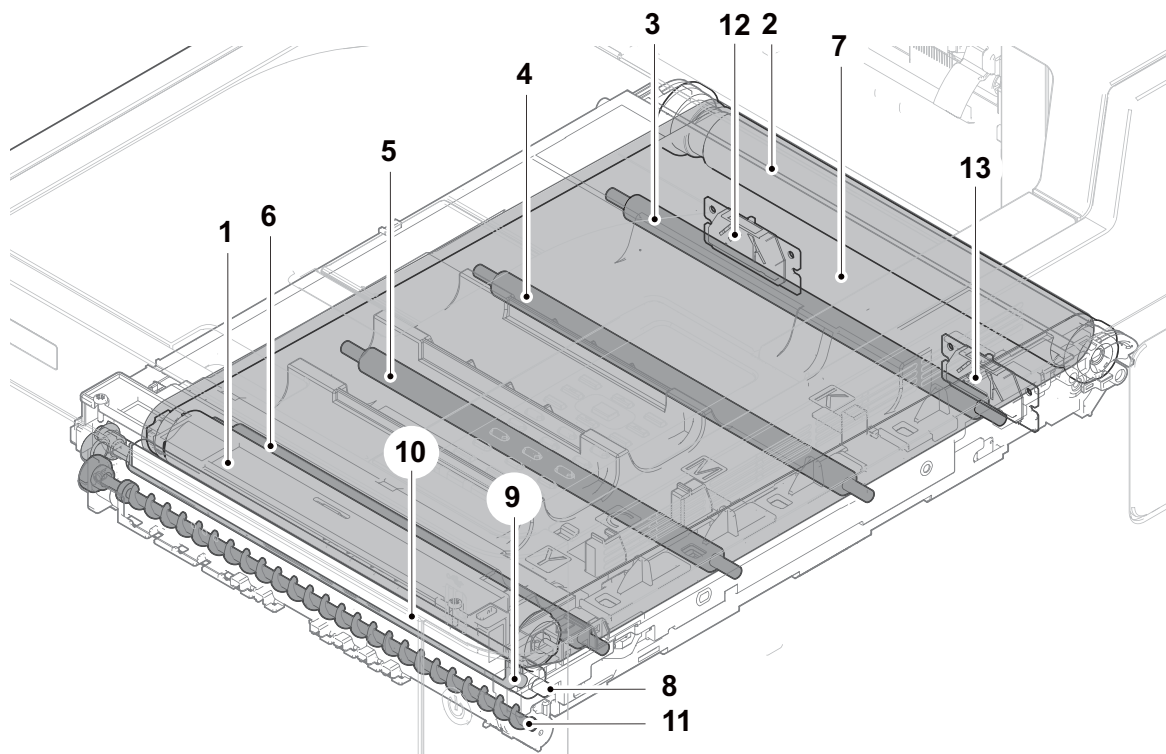


Figure 3-68



[Control block diagram]  
30/35 ppm model

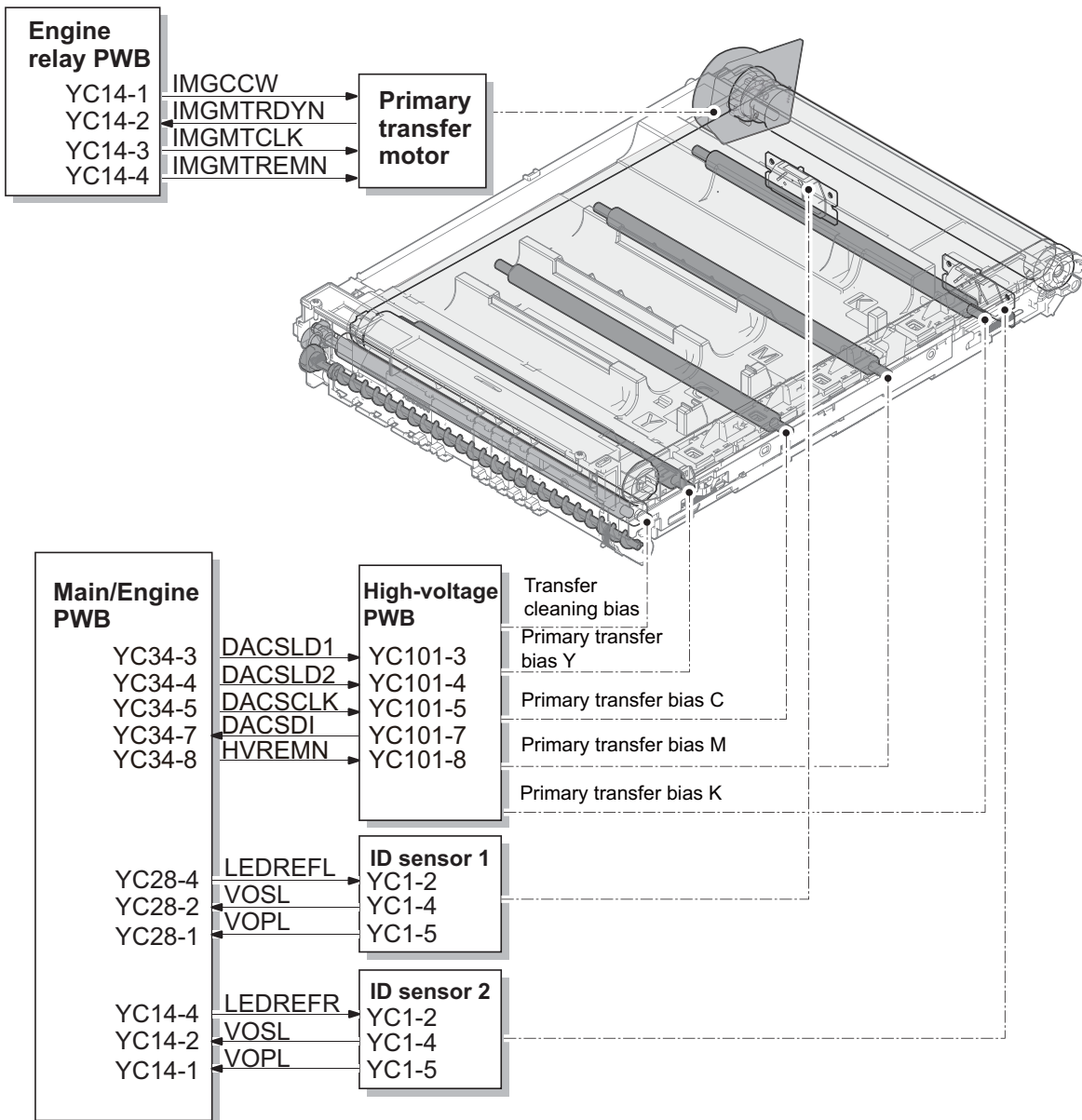


Figure 3-69

40 ppm model

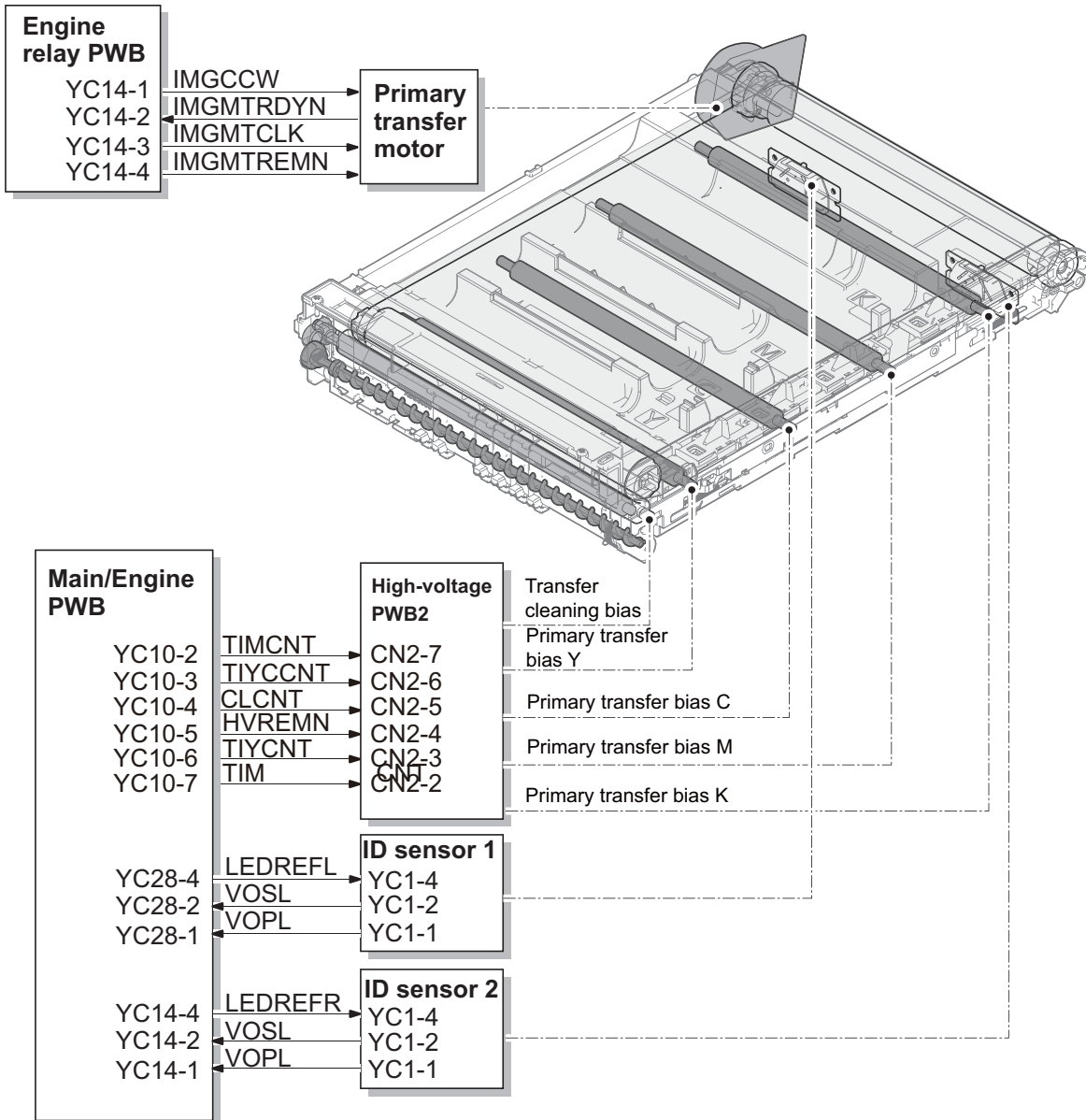


Figure 3-70

## (2) Secondary transfer roller section

The secondary transfer roller section consists of the secondary transfer roller attached to the paper conveying unit, and the separation brush. The DC bias from the high-voltage PWB is impressed to the secondary transfer roller, and the toner image formed on the transfer belt is transferred to the paper by the potential gap. After transferring, the paper is separated by self stripping and the electric charge on the paper is removed by the separation brush contacting the ground.

### [Components parts]

1. Secondary transfer roller
2. Primary transfer belt
3. Transfer front guide
4. Separation brush

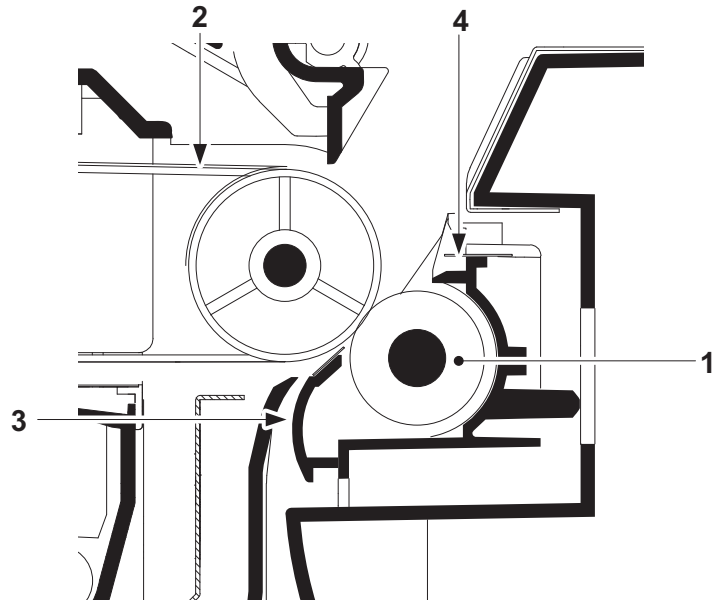


Figure 3-71

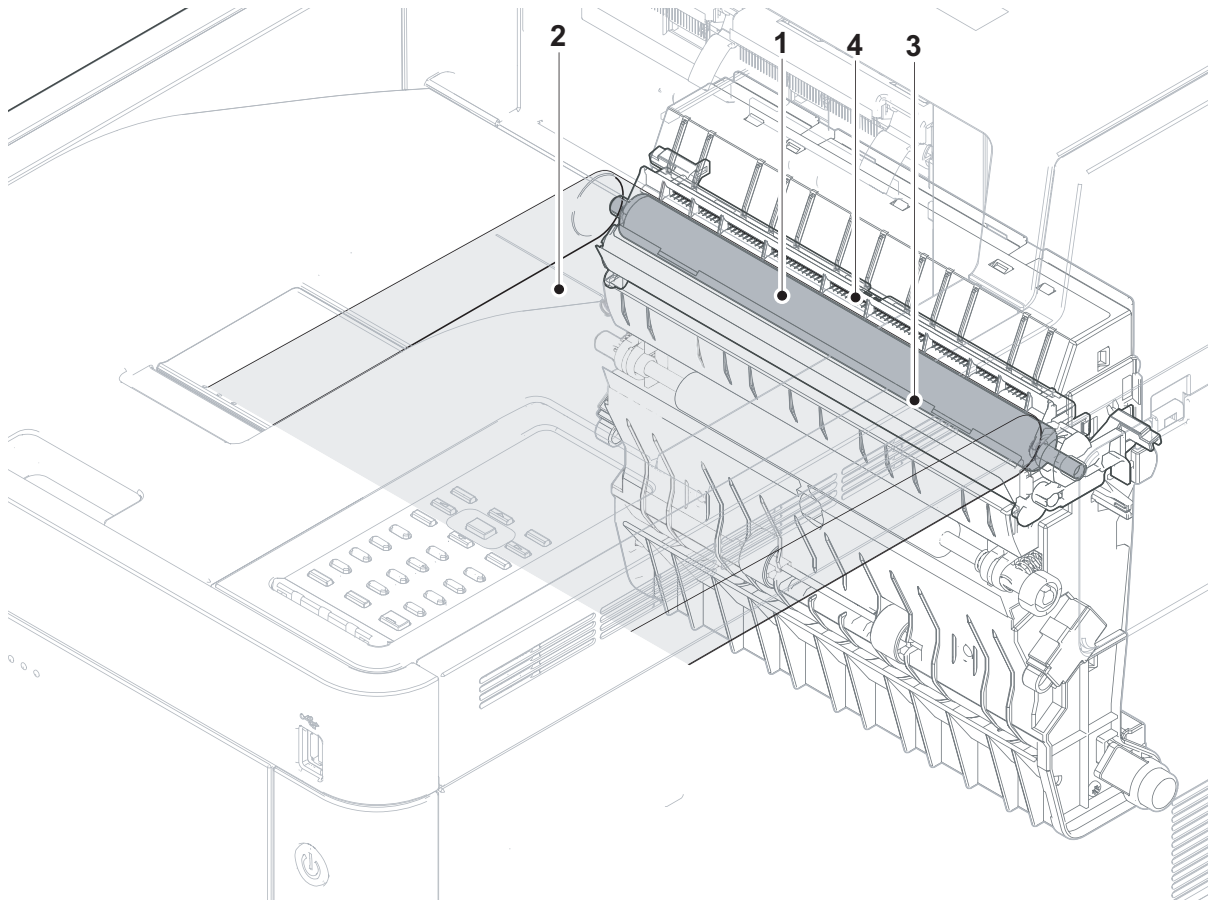


Figure 3-72

[Control block diagram]

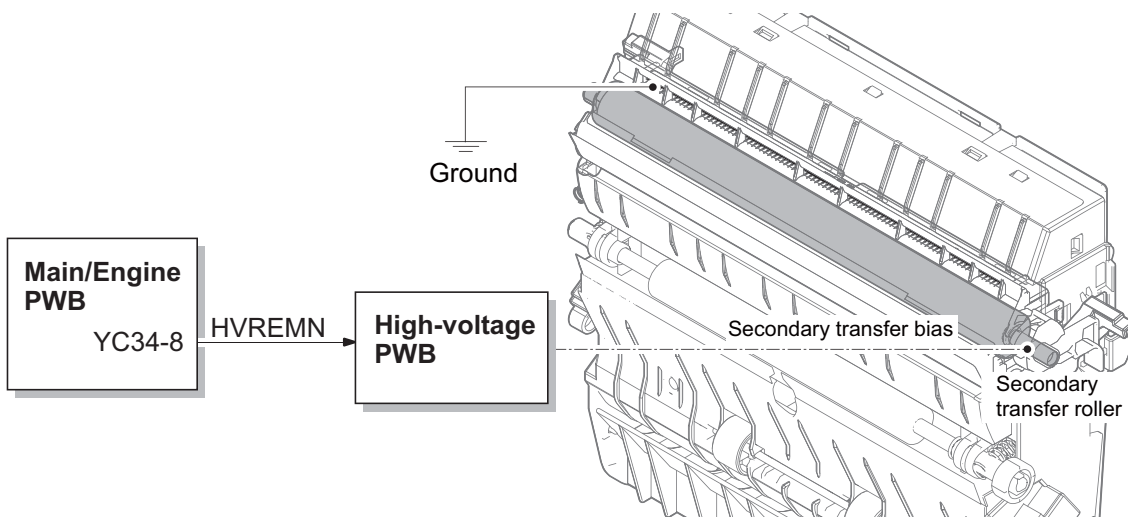


Figure 3-73

### 3-8 Fuser section

The paper from the transfer and separation section is pinched between the heat roller and the press roller. The heat roller is heated by the fuser heater, and the paper is pressed by the press roller with the pressure added by the pressure spring toward the heat roller, so toner is fused on the paper by that heat and pressure.

The surface temperature of the heat roller is detected by the fuser thermistor and controlled by the main/engine PWB. If the fuser section has abnormal temperature, the power supply line is shut off by switching the fuser thermostat and the fuser heater is turned off forcibly.

#### (1) Fuser unit

##### [Components parts]

1. Heat roller
2. Fuser heater 1
3. Fuser heater 2
4. Fuser thermostat 1
5. Fuser thermostat 2
6. Fuser thermistor 1
7. Fuser thermistor 2\*1
8. Fuser thermistor 2\*2
9. Separation plate
10. Press roller
11. Actuator  
(Exit sensor)
12. Fuser exit roller
13. Fuser exit pulley
14. Fuser front guide

\*1: 30 ppm model

\*2: 35/40 ppm model

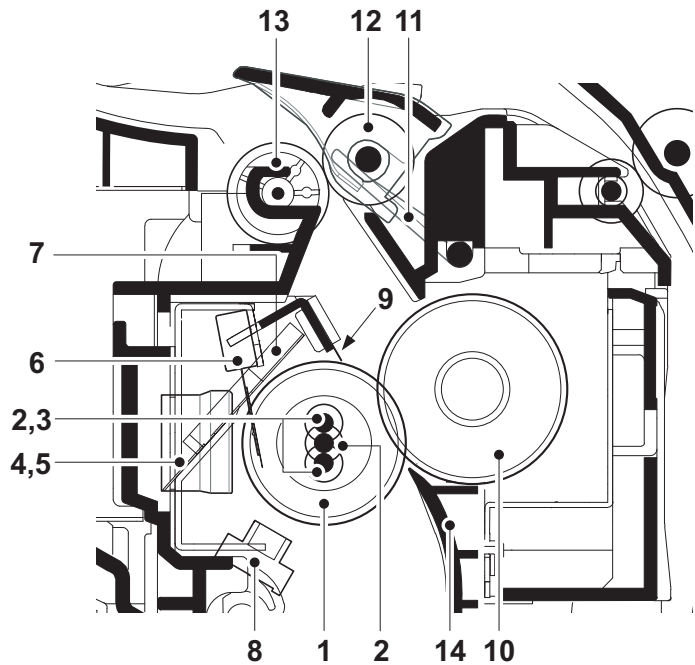
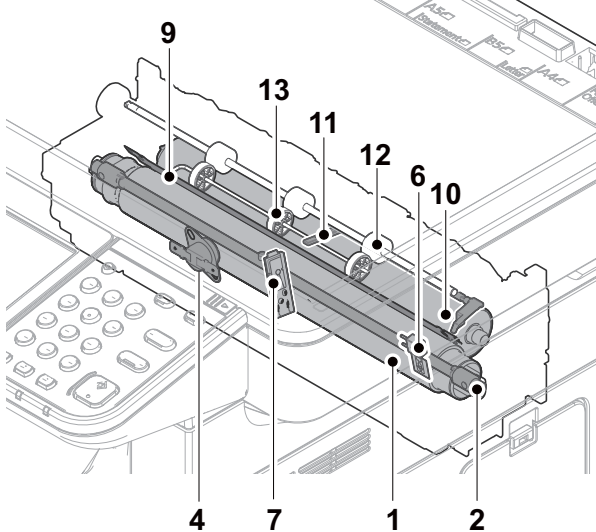


Figure 3-74

30 ppm model



35 ppm model

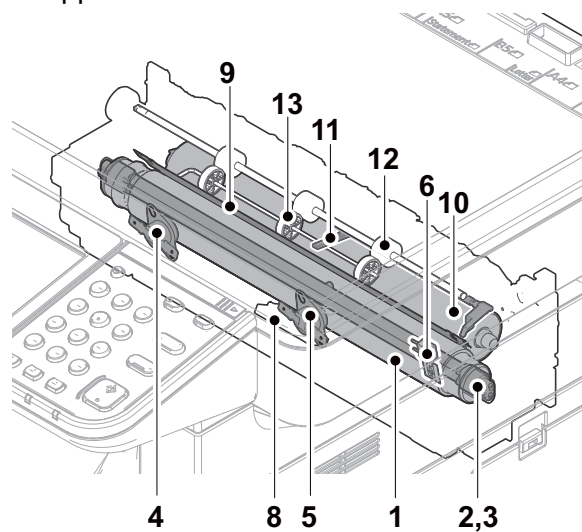


Figure 3-75

[Control block diagram]  
30 ppm model

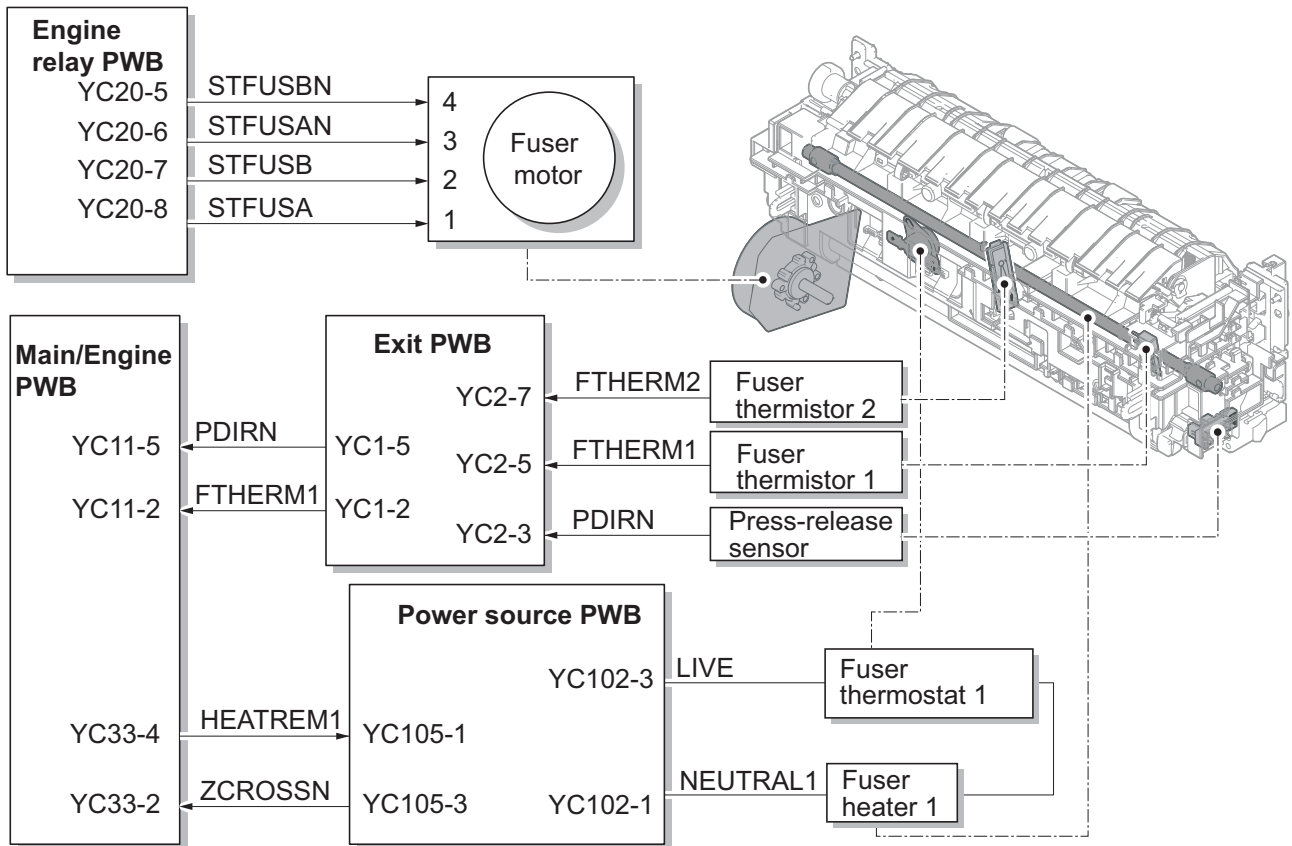


Figure 3-76

35/40 ppm model

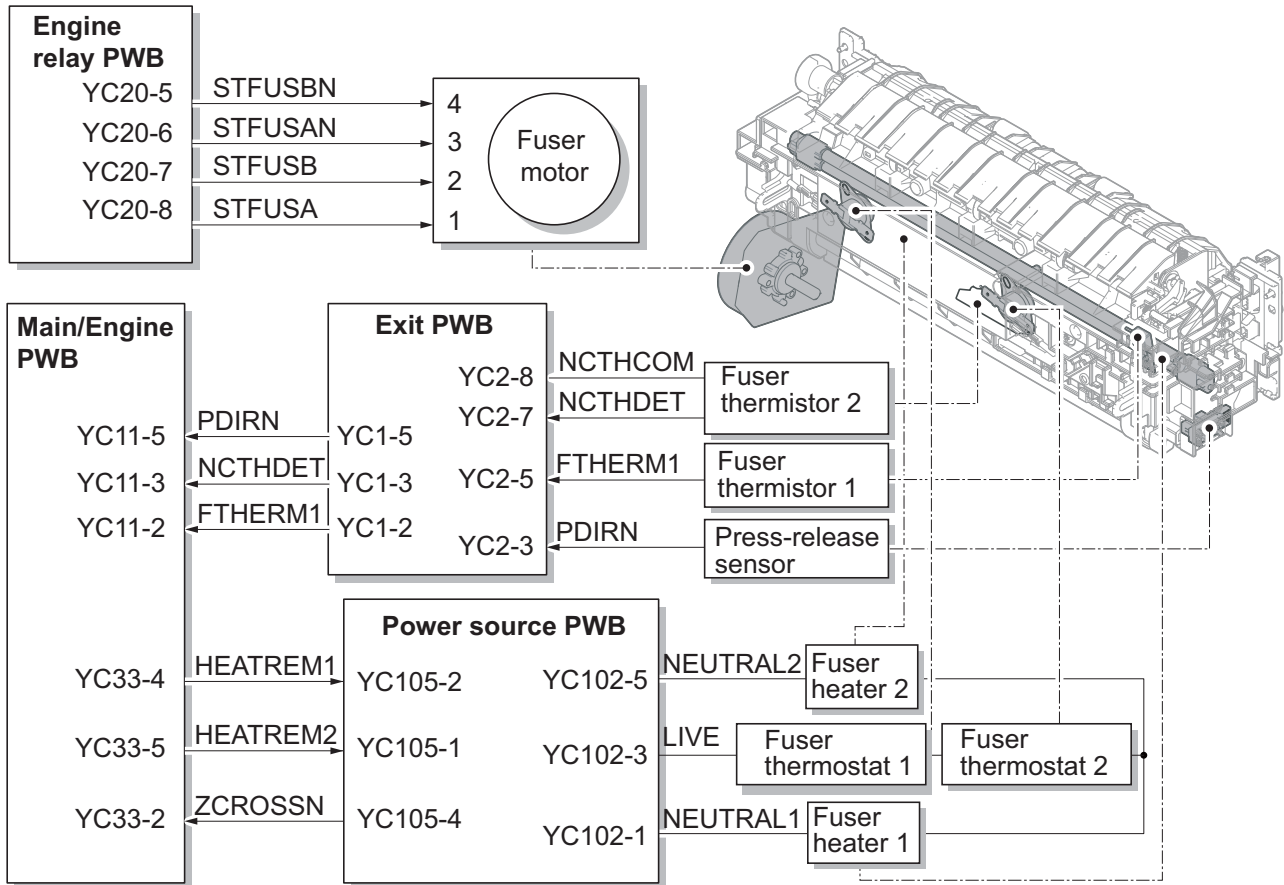


Figure 3-77

## 3-9 Exit and feedshift section

The exit and feedshift section consists of the paper path from the fuser section to the inner tray or the duplex conveying section.

### (1) Exit unit

#### 30 ppm model

##### [Components parts]

1. Exit roller
2. Exit pulley
3. Lower exit roller
4. Lower exit pulley
5. Feedshift guide
6. Actuator  
(Exit sensor)
7. Actuator  
(Exit full sensor)

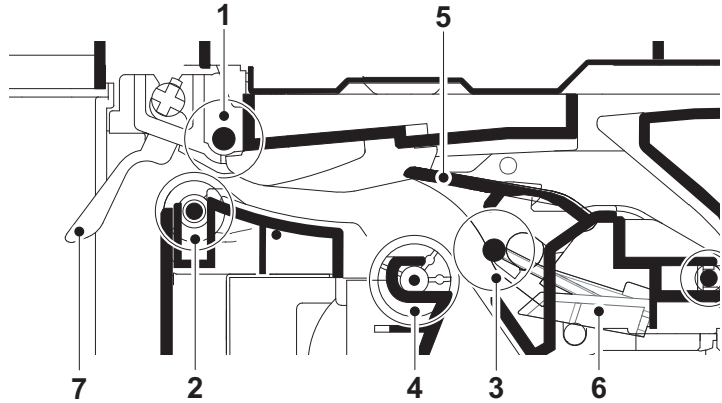


Figure 3-78

#### 35/40 ppm model

##### [Components parts]

1. Exit roller
2. Exit pulley
3. Exit upper roller
4. Exit upper pulley
5. Lower exit roller
6. Lower exit pulley
7. Feedshift guide
8. Actuator  
(Exit sensor)
9. Actuator  
(Exit full sensor)
10. Paper tray

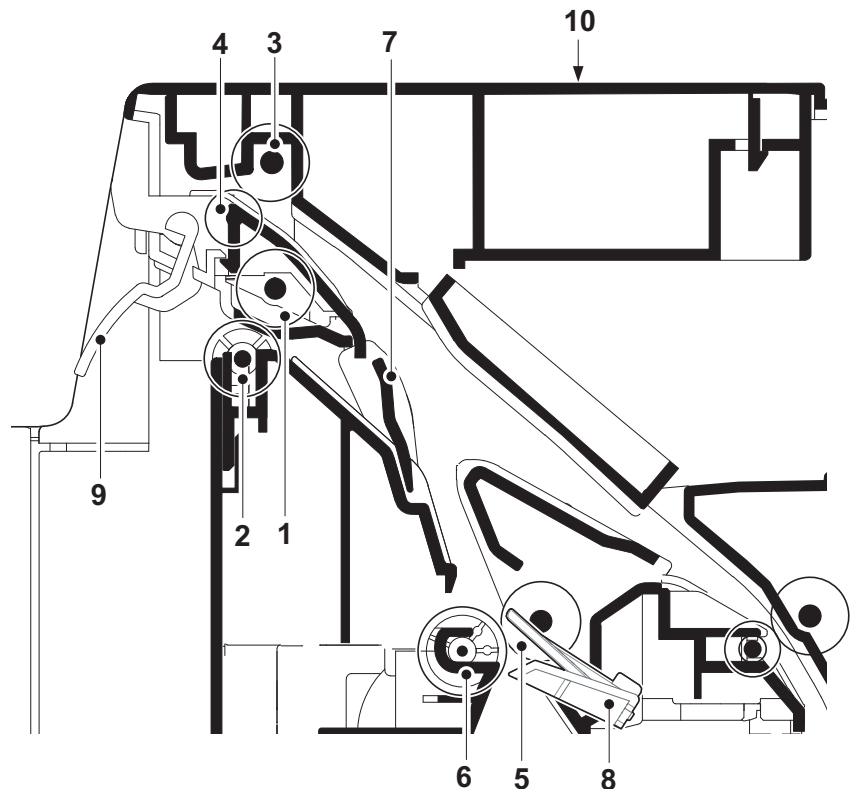


Figure 3-79



30 ppm model

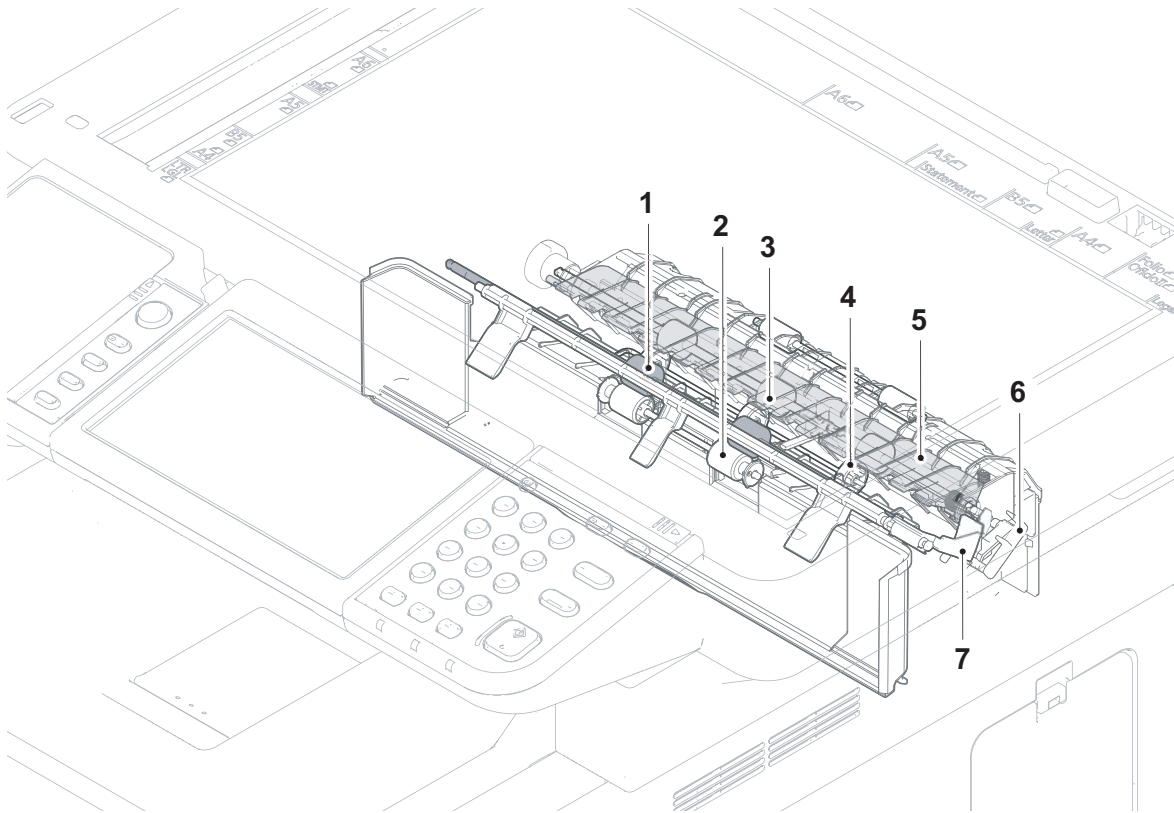


Figure 3-80

35/40 ppm model

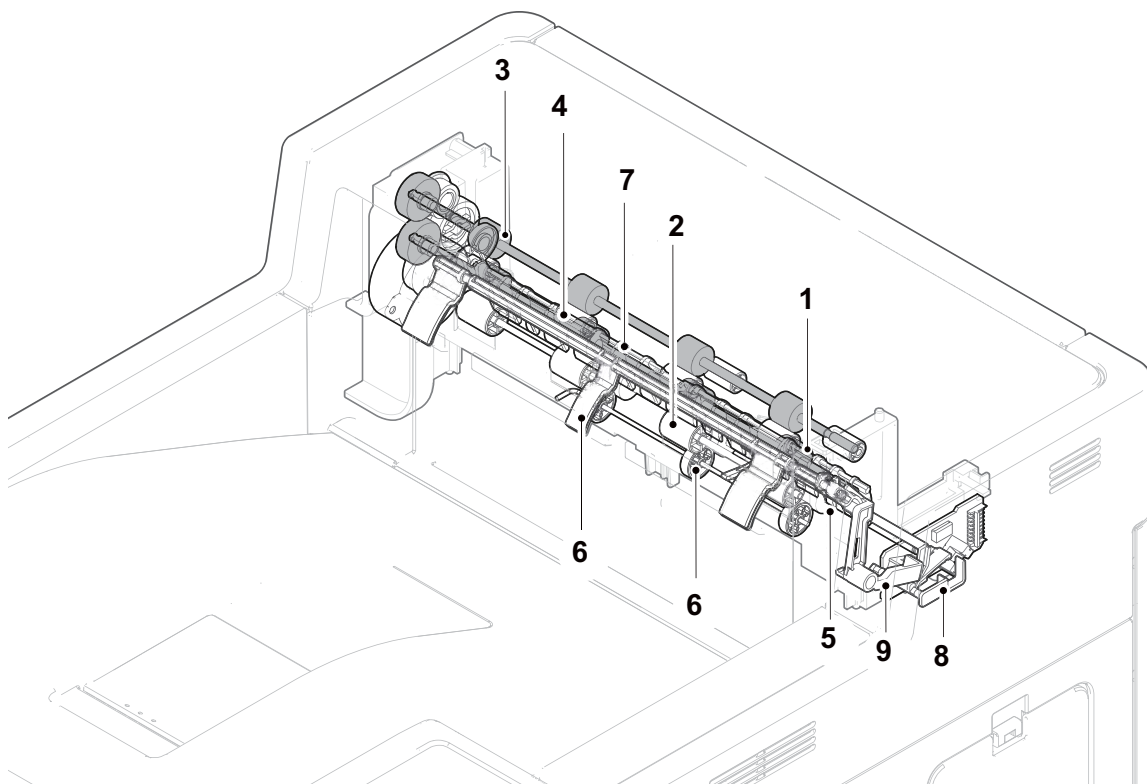


Figure 3-81

[Control block diagram]  
30 ppm model

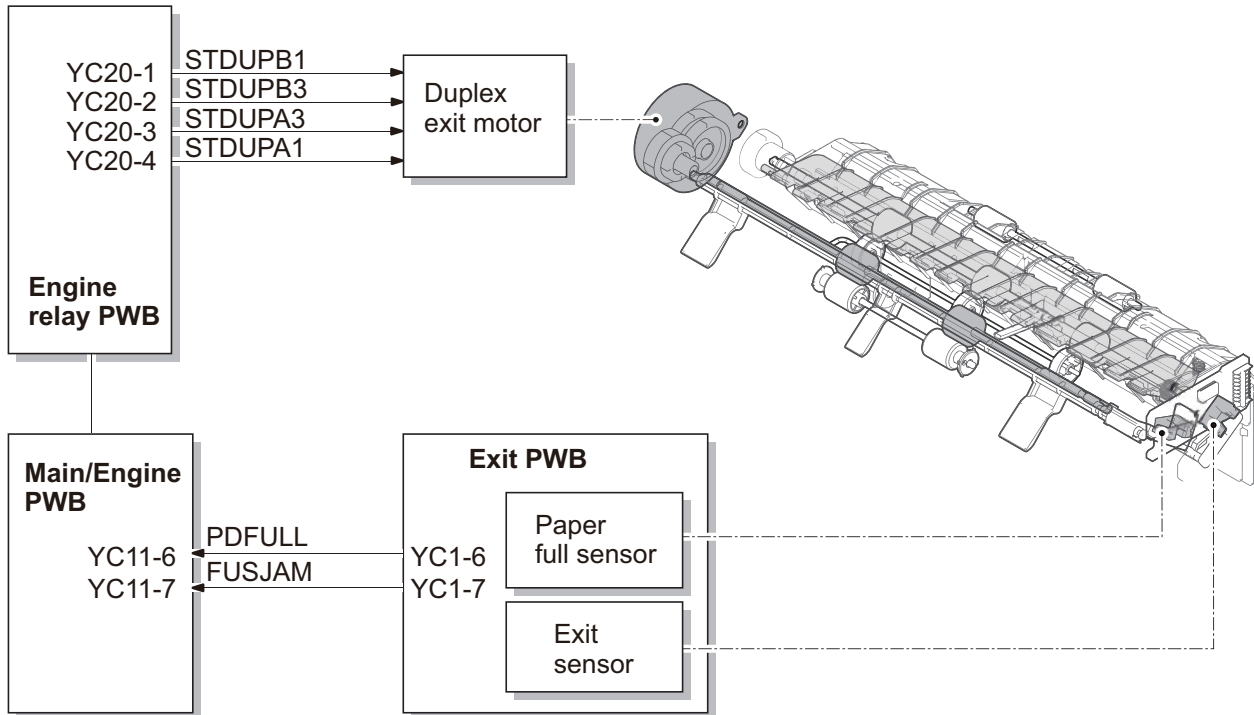


Figure 3-82

35/40 ppm model

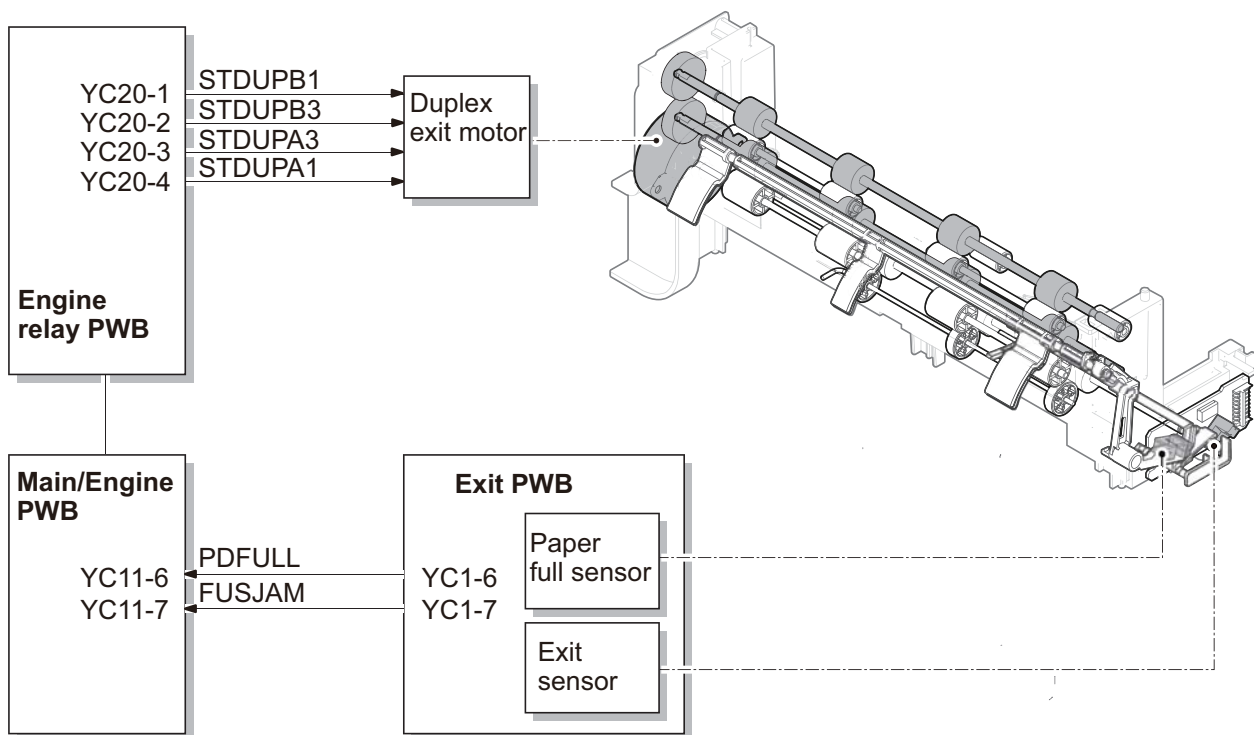


Figure 3-83

## 3-10 Duplex conveying section

### (1) Duplex conveying unit

The duplex conveying section consists of the paper conveying path to forward the paper from the exit and feedshift section in the duplex print to the paper conveying section.

#### [Components parts]

1. DU conveying roller L
2. DU conveying pulley L
3. DU conveying roller S
4. DU conveying pulley S
5. DU base
6. DU conveying guide
7. Actuator  
(Duplex sensor) \*1

\*1: 35/40 ppm model

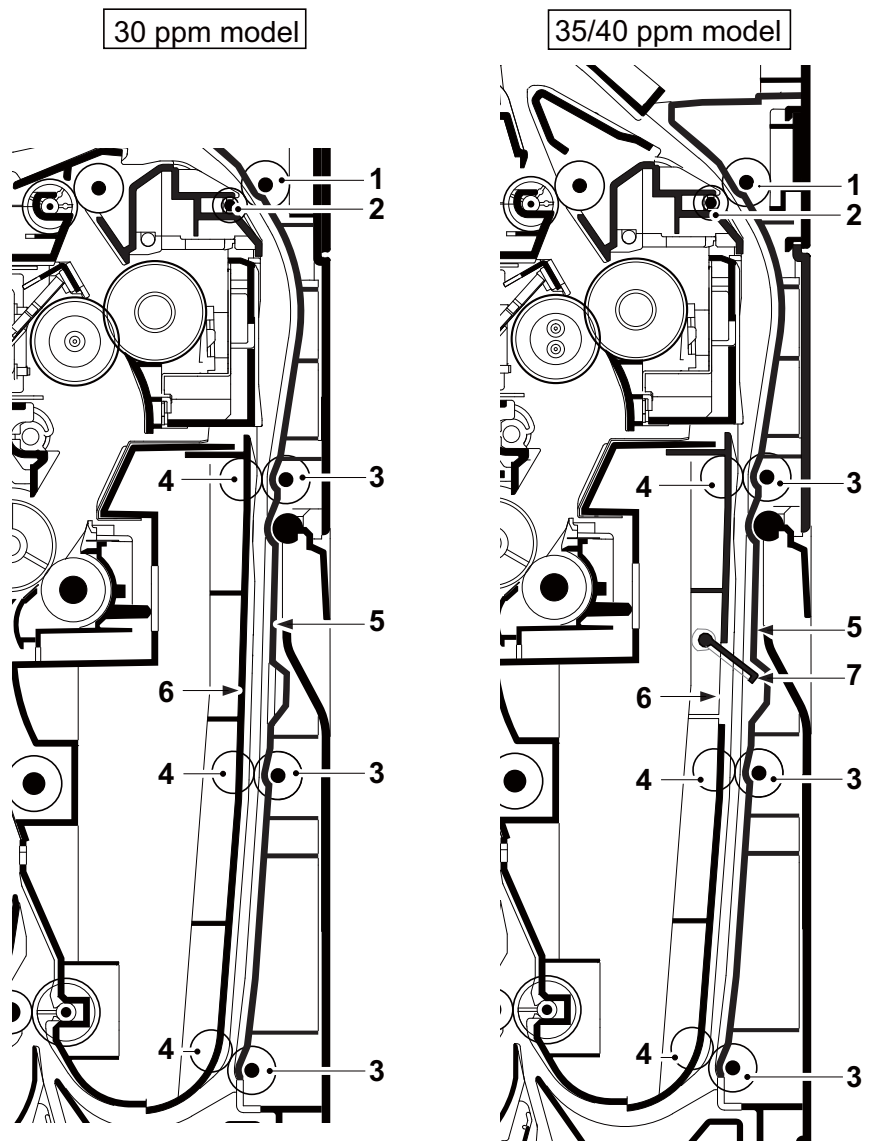


Figure 3-84

30 ppm model

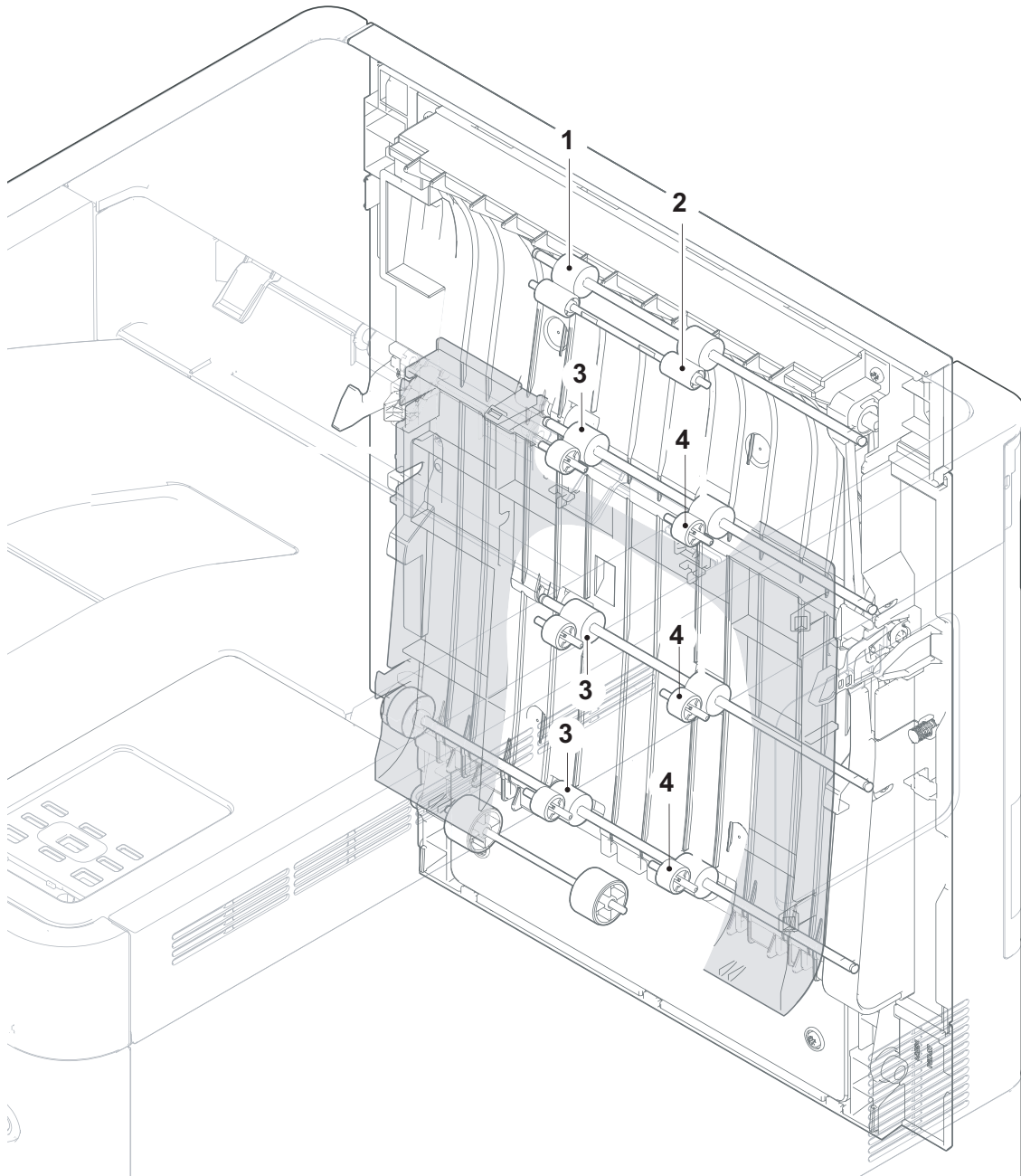


Figure 3-85

35/40 ppm model

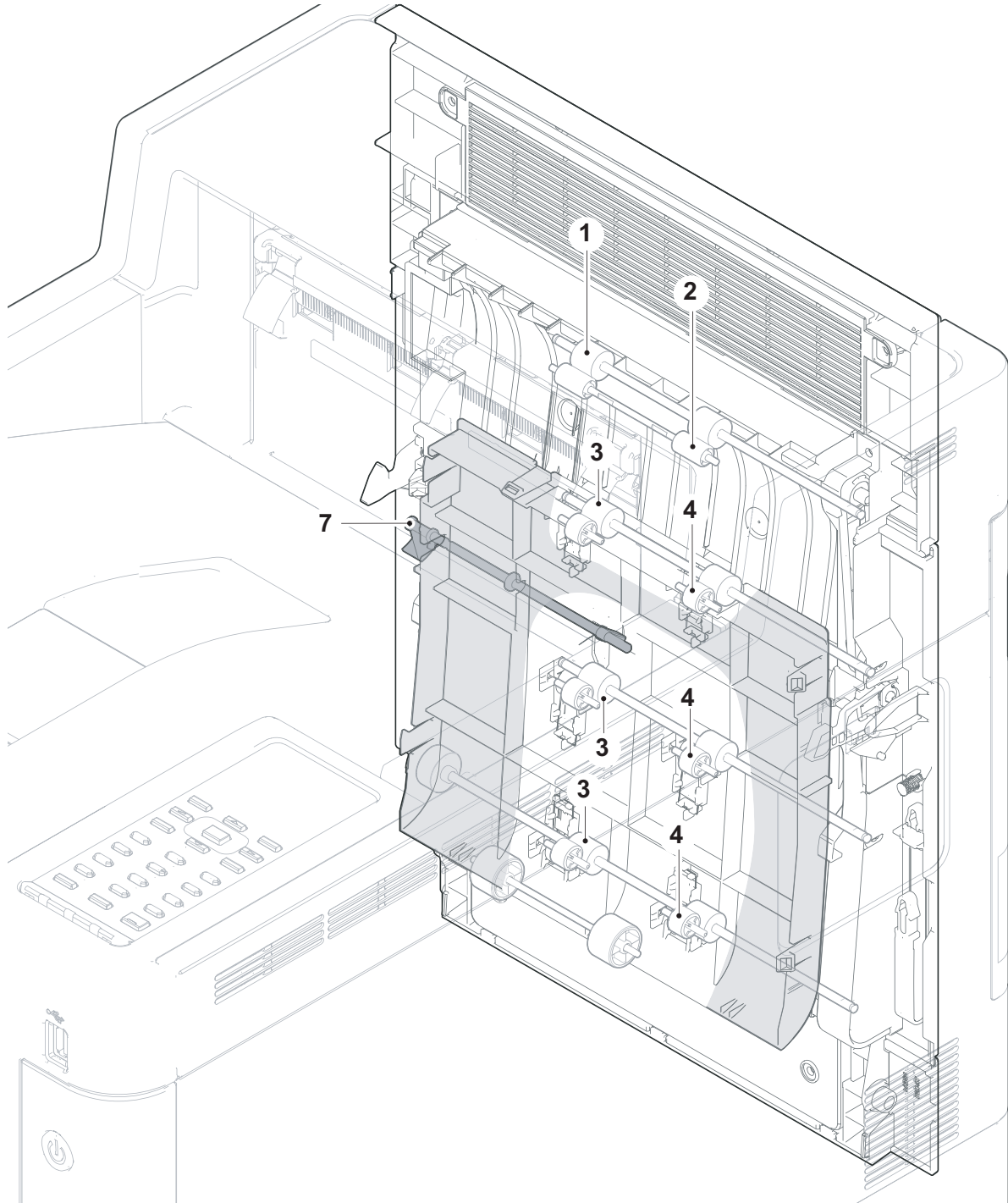


Figure 3-86

[Control block diagram]  
30 ppm model

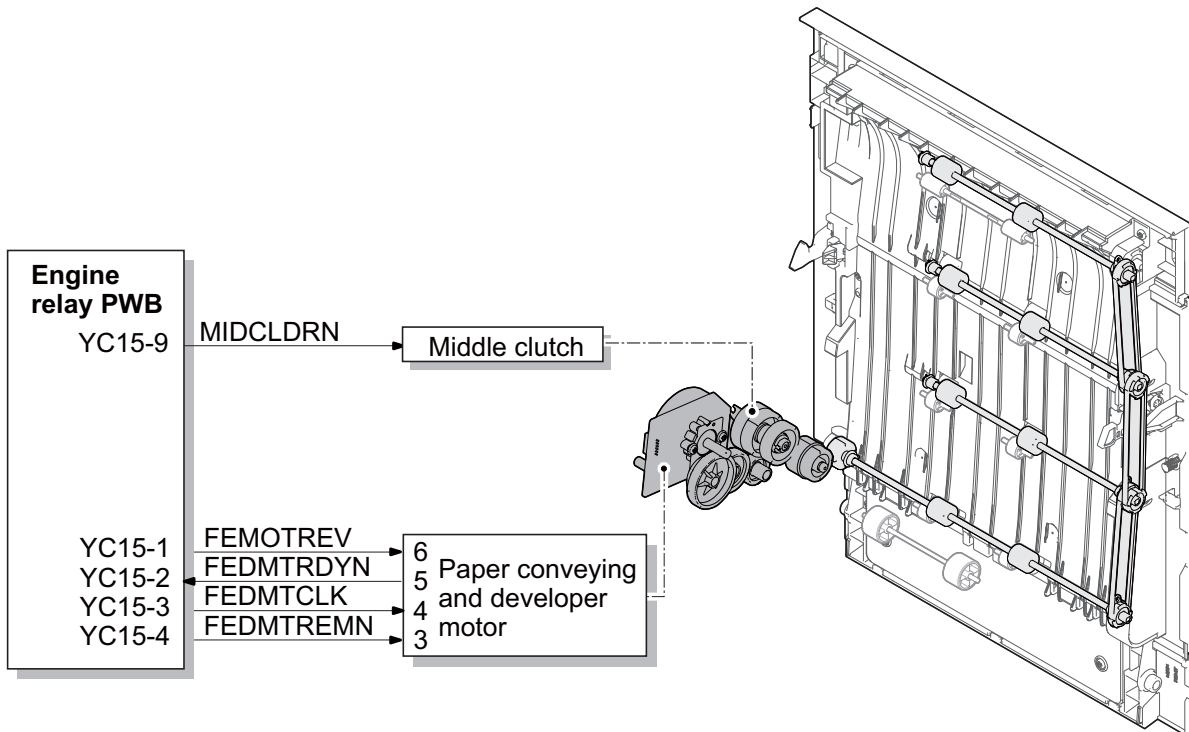


Figure 3-87

35/40 ppm model

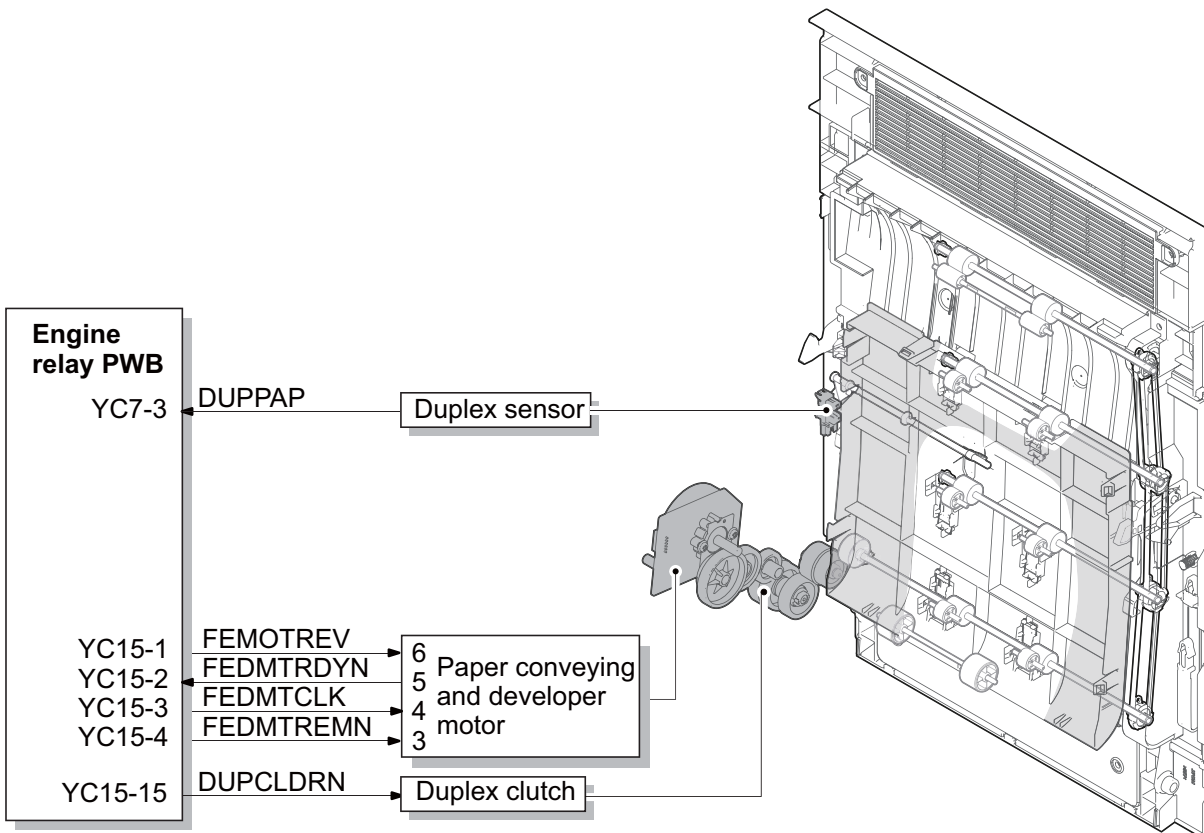


Figure 3-88

## 3-11 Optional paper feeder

### (1) Paper feed section

The paper feeder is a mechanism that feeds paper from its cassette to the main unit. The cassette can load 500 sheets of plain paper (80g/m<sup>2</sup>), and the paper is fed by the rotation of the pickup roller and feed roller. The retard roller prevents the paper from multi-feeding by the effect of the torque limiter.

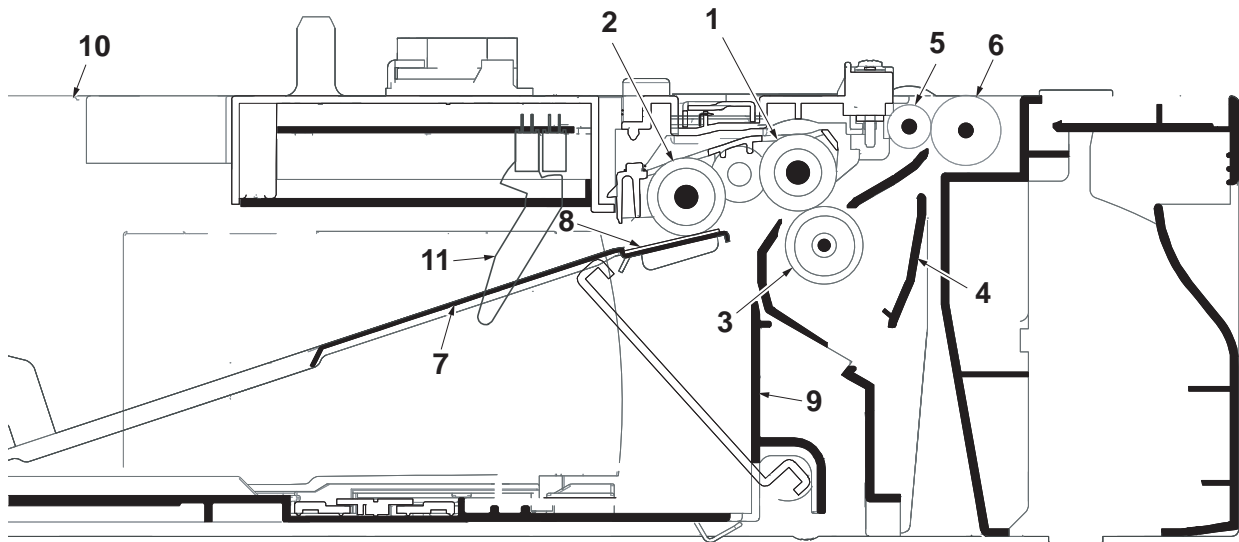


Figure 3-89

- |                      |                        |
|----------------------|------------------------|
| 1. Paper feed roller | 7. Lift plate          |
| 2. Pickup roller     | 8. Bottom pad          |
| 3. Retard roller     | 9. Cassette base       |
| 4. Retard guide      | 10. Upper cover        |
| 5. Conveying roller  | 11. Actuator           |
| 6. Conveying pulley  | (PF paper sensor 1, 2) |



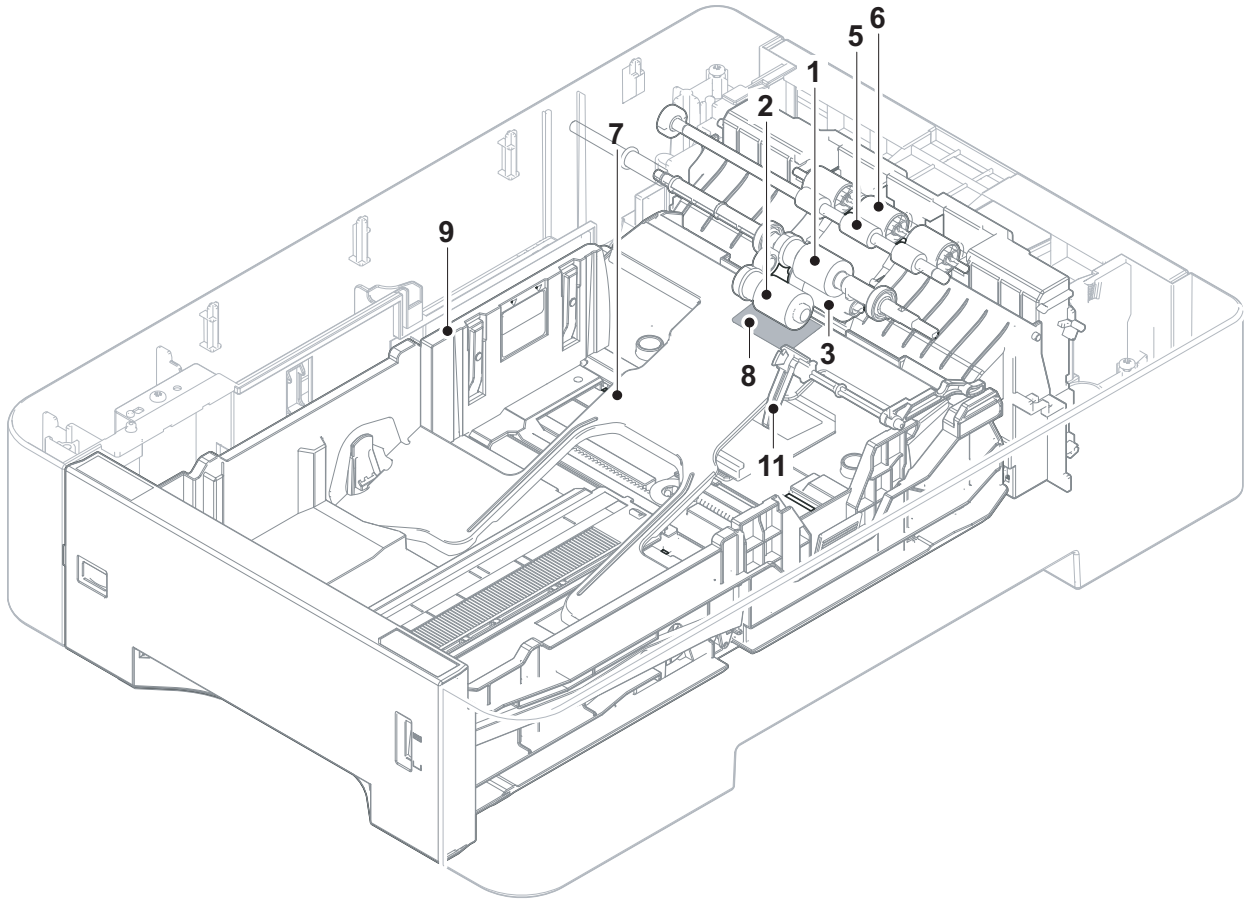


Figure 3-90



[Control block diagram]

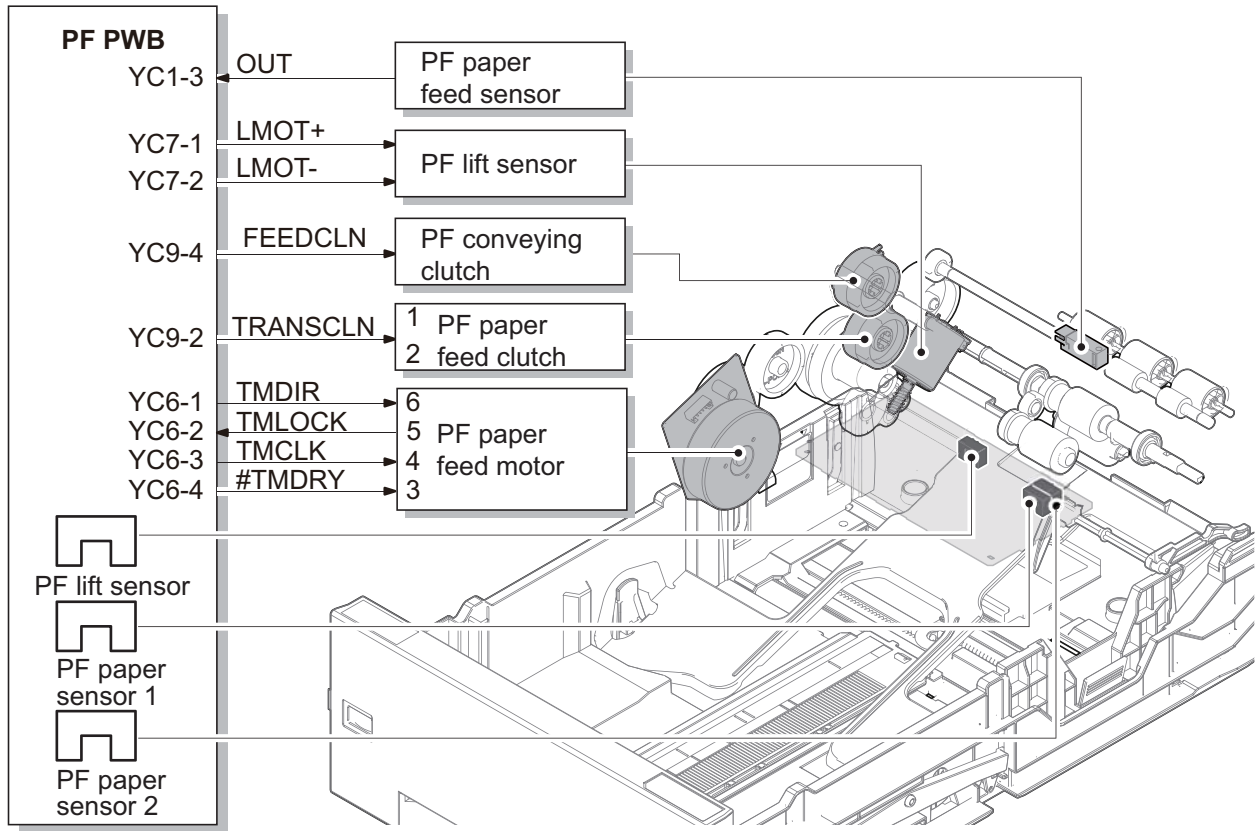


Figure 3-91

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## **4 Maintenance**

### **4-1 Precautions for the maintenance**

#### **(1) Precautions**

Before disassembling the main unit, press the power switch to turn the power off. Before work, unplug the power plug after confirming the operation panel is turned off.

When handling the PWBs (printed wiring boards), do not touch parts with bare hands. Make sure not to damage the PWB.

If ICs are mounted on the PWB, do not touch them by hand or something charged with electrostatic.

Make sure to release the hook before disconnecting the connector with the hook.

Take care not to pinch up the wire and cable.

Use the original screws when reassembling the parts once disassembled.

If the types and the sizes of screws are not sure, refer to the parts list.

#### **(2) Storage and handling of the drum**

Note the following when handling and storing the drum.

When detaching the drum unit, never expose the drum surface to strong direct light.

Store in the range of ambient temperature of -20 to 40 degree C(-4°F to 104°F) and ambient humidity of 85% RH or less. Avoid storing the drum unit where temperature and humidity rapidly change though within the specified range.

Avoid exposure to any substance which is harmful or may affect the quality of the drum.

Do not touch the drum surface with any object.

Make sure not to touch the drum surface with bare hands or gloves.

If the drum is touched by hands or stained with oil, clean it.

#### **(3) Storage of the toner container**

Store the toner container in a cool dark place.

Do not place the toner container under direct sunshine or in a damp environment.

#### (4) Screening of the toner container

Look at the screening film on the brand protection seal affixed to the toner container through the windows of the validation viewer.

Look at the screening film through two windows to check the genuineness.

A black-colored band when seen through the the anti-counterfeit film portion left side window (mark ● ).

A shiny or gold-colored band when seen through the anti-counterfeit film portion right side window (mark ☀ ).

When seen as the above, it is genuine. Otherwise (e.g. both seen in gold), it is a counterfeit.

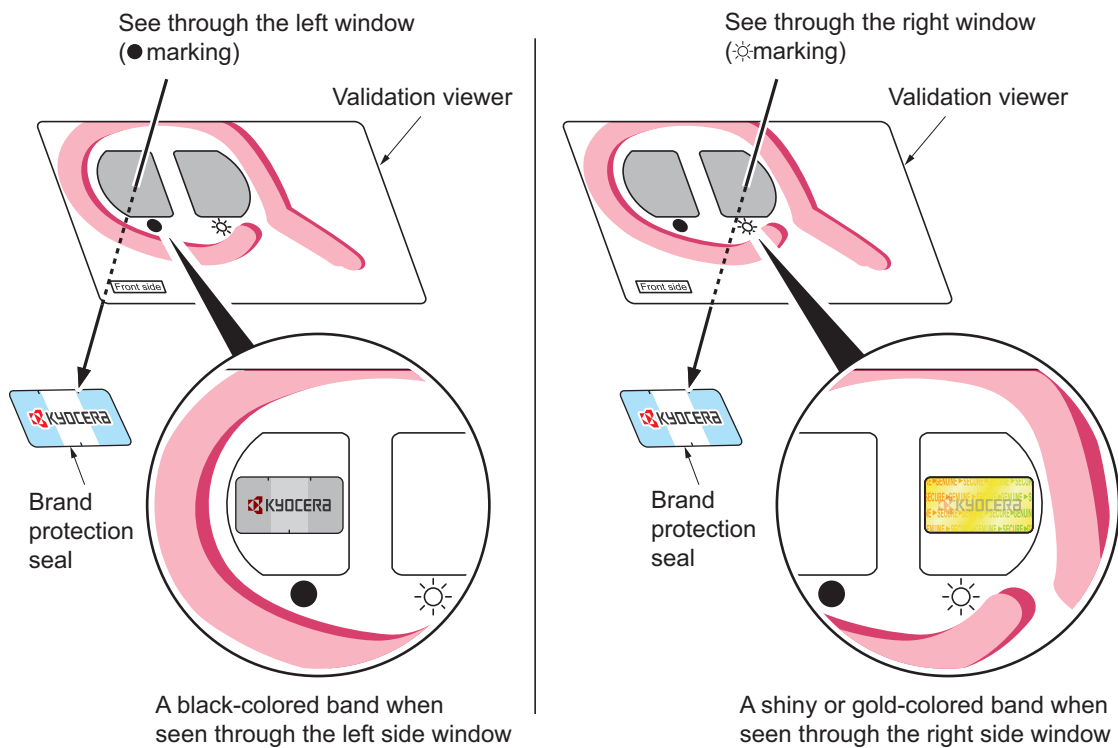


Figure 4-1

The brand protection seal has an incision as shown below to prohibit reuse.

Three cut parts at the red circle section

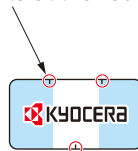


Figure 4-2

## 4-2 Maintenance parts

### (1) Maintenance kits

#### 30 ppm model

Maintenance parts name		Quantity	Part No.
Name used in service manual	Name used in parts list		
MK-5141*1	MK-5141/MAINTENANCE KIT	1	1702NR9JP1
MK-5142*2	MK-5142/MAINTENANCE KIT	1	1702NR7US1
MK-5140*3	MK-5140/MAINTENANCE KIT	1	1702NR8NL1
MK-5144*4 (200.000 images)	MK-5144/MAINTENANCE KIT	1	1702NR8AS1
Drum unit	DK-5140	4	
Developer unit (K)	DV-5140(K)(J)*1/ DV-5140(K)	1	
Developer unit (Y)	DV-5140(Y)(J)*1/ DV-5140(Y)	1	
Developer unit (M)	DV-5140(M)(J)*1/ DV-5140(M)	1	
Developer unit (C)	DV-5140(C)(J)*1/ DV-5140(C)	1	
Primary transfer unit	TR-5140	1	
Secondary transfer roller unit	PARTS ROLLER TRANSFER SP	1	
Fuser unit	FK-5141*1/ FK-5142*2/ FK-5140*3*4	1	
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	1	
Retard roller	PARTS RETARD ASSY SP	1	

\*1: 100V model, \*2: 120V model, \*3: 220-240V model, \*4: 240V model

#### 35 ppm model

Maintenance parts name		Quantity	Part No.
Name used in service manual	Name used in parts list		
MK-5152*1	MK-5152/MAINTENANCE KIT	1	1702NS7US2
MK-5150*2	MK-5150/MAINTENANCE KIT	1	1702NS8NL2
MK-5154*3 (200.000 images)	MK-5154/MAINTENANCE KIT	1	1702NS8AS2
Drum unit	DK-5140	4	
Developer unit (K)	DV-5150(K)	1	
Developer unit (Y)	DV-5150(Y)	1	
Developer unit (M)	DV-5150(M)	1	
Developer unit (C)	DV-5150(C)	1	
Primary transfer unit	TR-5140	1	
Secondary transfer roller unit	PARTS ROLLER TRANSFER SP	1	
Fuser unit	FK-5162*1/ FK-5160*2*3	1	
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	1	
Retard roller	PARTS RETARD ASSY SP	1	

\*1: 120V model, \*2: 220-240V model, \*3: 240V model

40 ppm model

Maintenance parts name		Quantity	Part No.
Name used in service manual	Name used in parts list		
MK-5291*1	MK-5291/MAINTENANCE KIT	1	1702TX9JP1
MK-5292*2	MK-5292/MAINTENANCE KIT	1	1702TX7US1
MK-5290*3	MK-5290/MAINTENANCE KIT	1	1702TX8NL1
MK-5294*4 (300,000 images)	MK-5294/MAINTENANCE KIT	1	1702TX8AS1
Drum unit	DK-5160	4	
Developer unit (K)	DV-5290(K)(J)*1/ DV-5290(K)	1	
Developer unit (Y)	DV-5290(Y)(J)*1/ DV-5290(Y)	1	
Developer unit (M)	DV-5290(M)(J)*1/ DV-5290(M)	1	
Developer unit (C)	DV-5290(C)(J)*1/ DV-5290(C)	1	
Primary transfer unit	TR-5160	1	
Secondary transfer roller unit	PARTS ROLLER TRANSFER SP	1	
Fuser unit	FK-5291*1/ FK-5292*2/ FK-5290*3*4	1	
Paper feed roller unit	PARTS HOLDER FEED ASSY SP	1	
Retard roller	PARTS RETARD ASSY SP	1	

\*1: 100V model, \*2: 120V model, \*3: 220-240V model, \*4: 240V model

## (2) Clearing the maintenance kit message

Replace the maintenance kit at every 200,000 images (for 30/35 ppm model) and at 300,000 images (for 40ppm model).

The message "Replace MK." appears at the replacement timing.

### Reset the counter by system menu after replacing the maintenance kit.

30/35 ppm model: [Menu] key > [Adjust/Maintenance] > [Service] > [Maintenance]  
(See page P.6-20)

40 ppm model: [Menu] key > [Adjust/Maintenance] > [Service setting] > [Maintenance]  
(See page P.6-28)

## 4-3 Periodic maintenance procedures

### (1) Detaching and reattaching the Primary transfer unit

1. Lift the handle (a) and open the top tray (b).

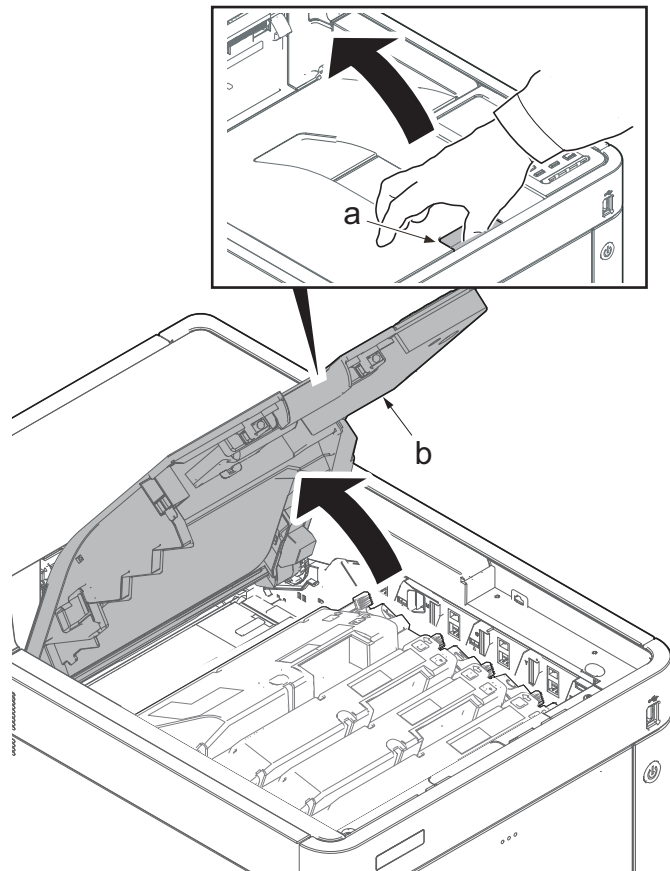


Figure 4-3

2. Rotate the lock lever (a).

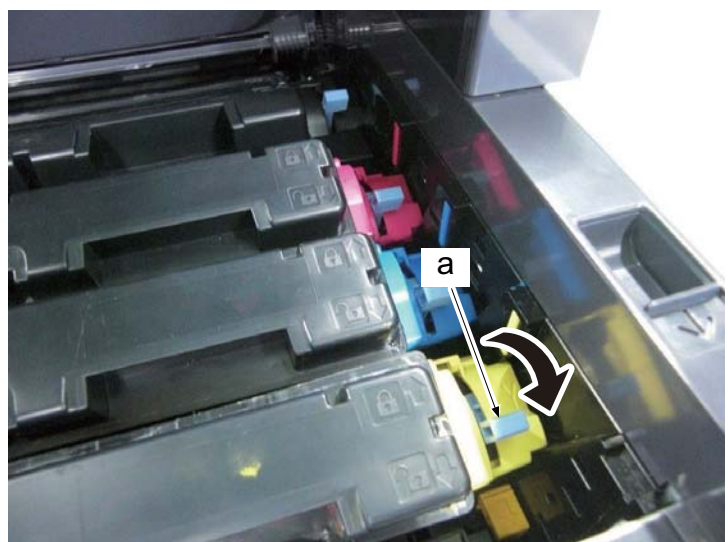


Figure 4-4

3. Detach the toner containers (K, M, C and Y)(a).

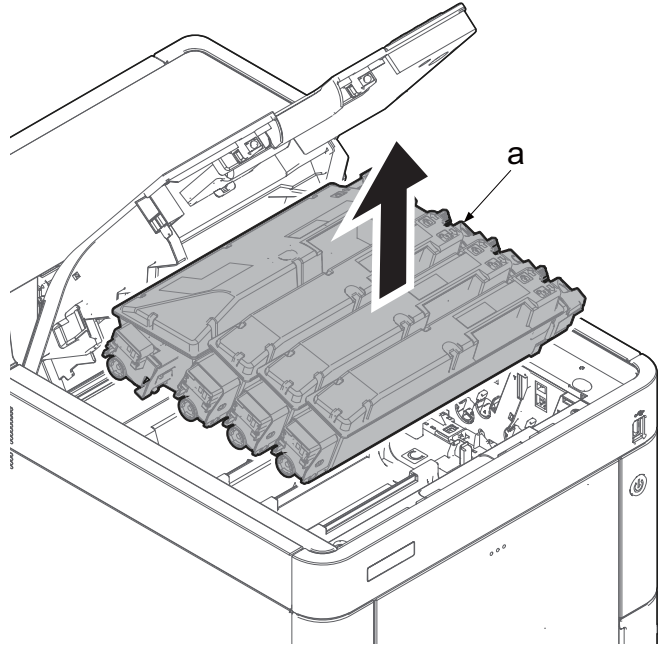


Figure 4-5

\*: When detaching the toner container (a), first lift its handle (b) and then pull it out upward.

**IMPORTANT**

Without releasing the lock lever, do not lift up the toner container forcefully.

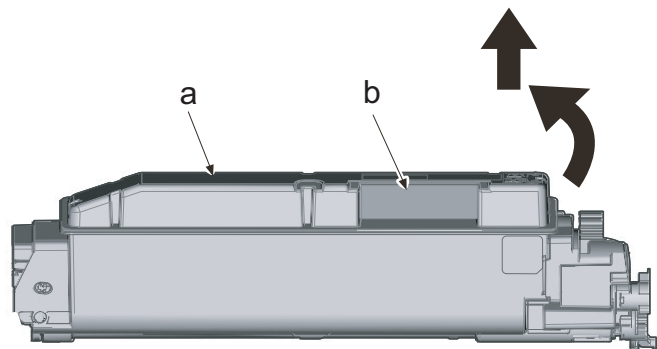


Figure 4-6



4. Pull the right shutter lever (a) in the direction of the arrow.

\*: Close the toner feed inlet by pulling this lever.

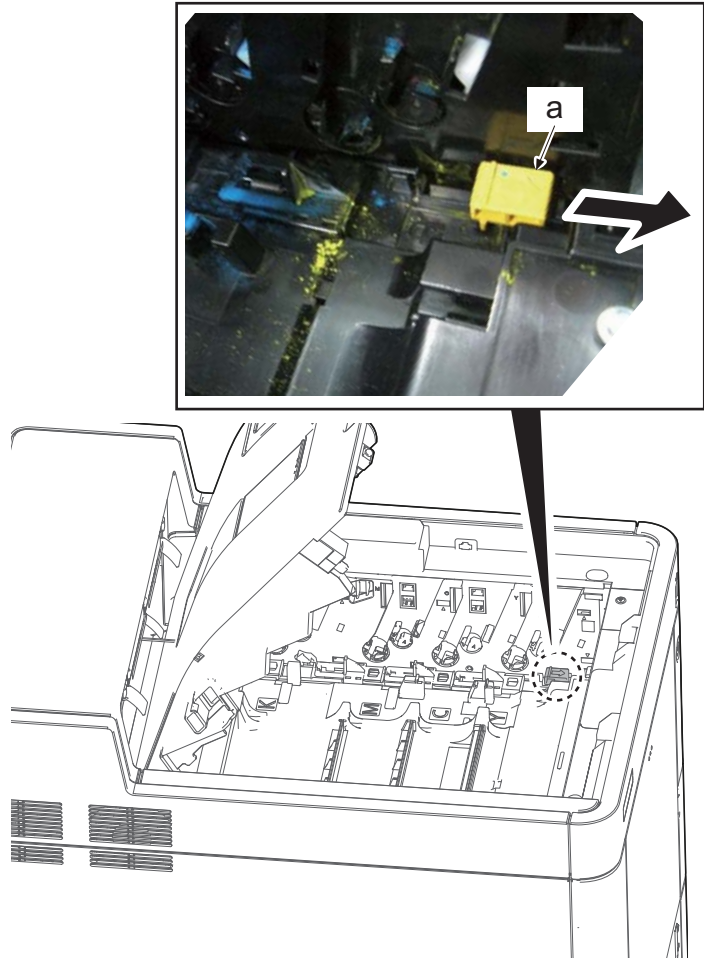


Figure 4-7

5. Remove the screw (a)(M3x12).

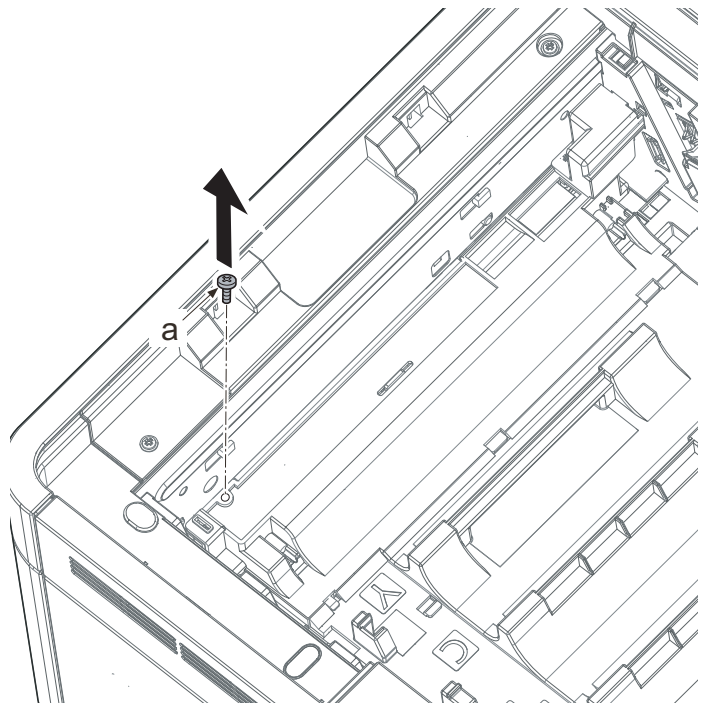


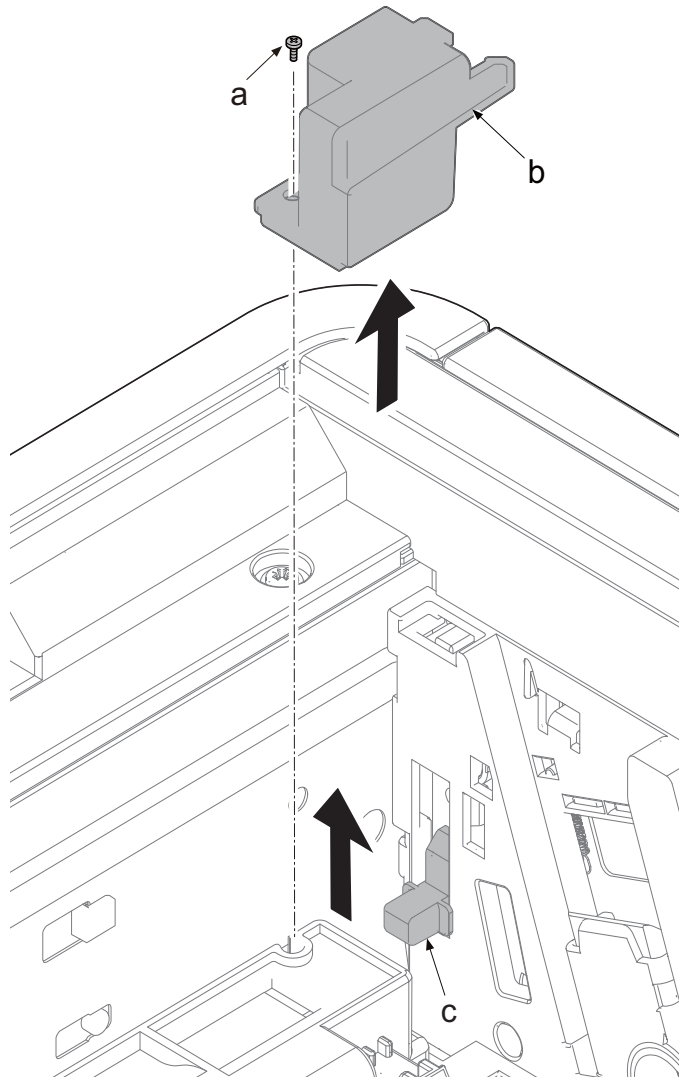
Figure 4-8

6. Remove the screw (a)(M3x12)
7. Remove the lever cover (b).
8. Lift up the drive release lever (c).

\*: When raising the lever, the joint of the drive coupling is released.

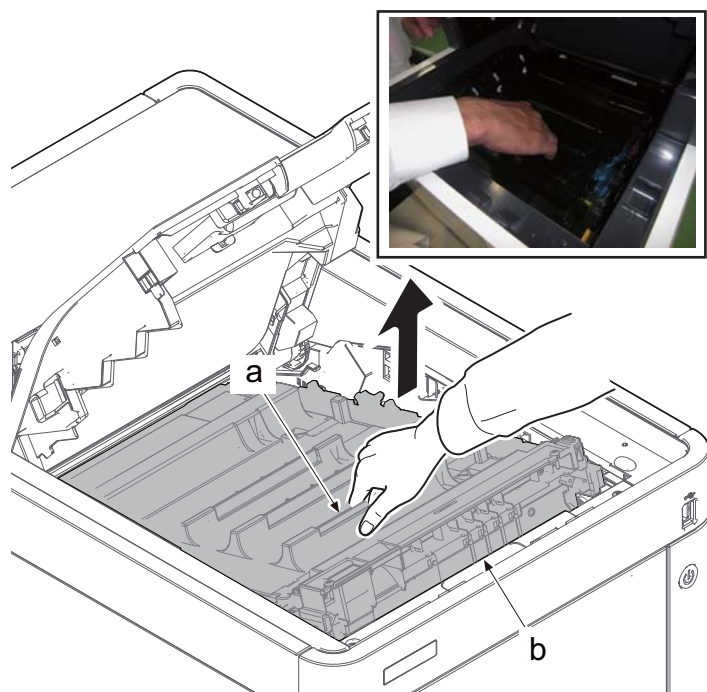
**IMPORTANT**

If omitting to attach the lever cover, "Cover open" message is displayed while the tray swithc is not turned on.



**Figure 4-9**

9. Hold the handle (a) and detach the primary transfer unit (b).



**Figure 4-10**

\*: Hold the handle (b) at the machine front side and lift up the primary transfer unit (a). Then, further lift it up and pull it toward the machine front side to detach.

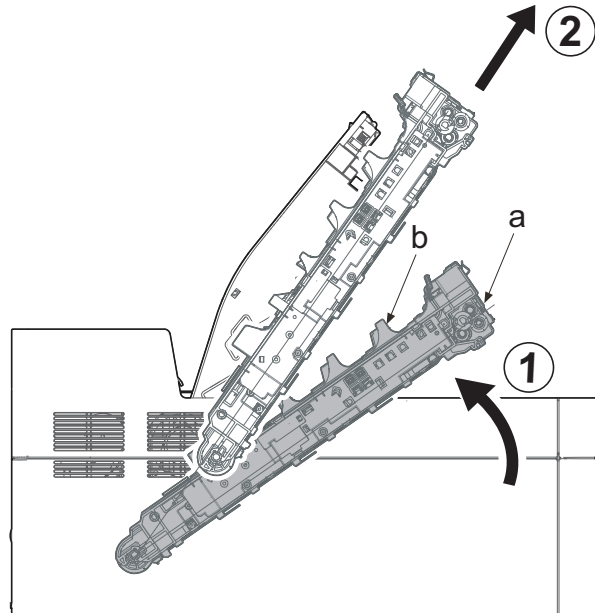


Figure 4-11

\*: When removing the primary transfer unit (a) or it is unstable to install it, hold the handle (b) at the machine rear side by the other hand

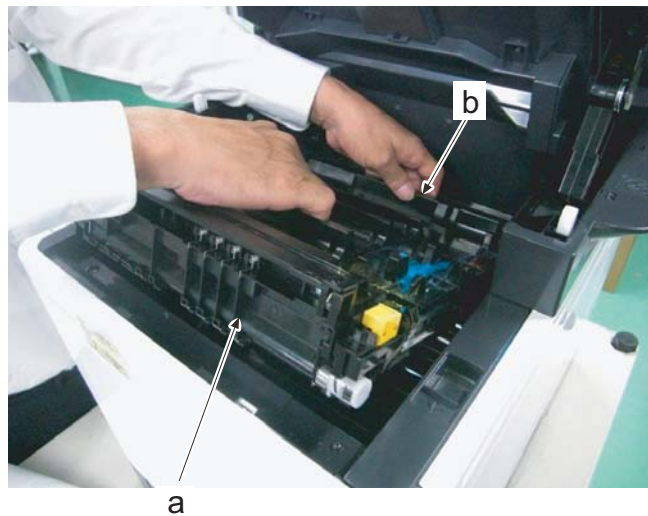
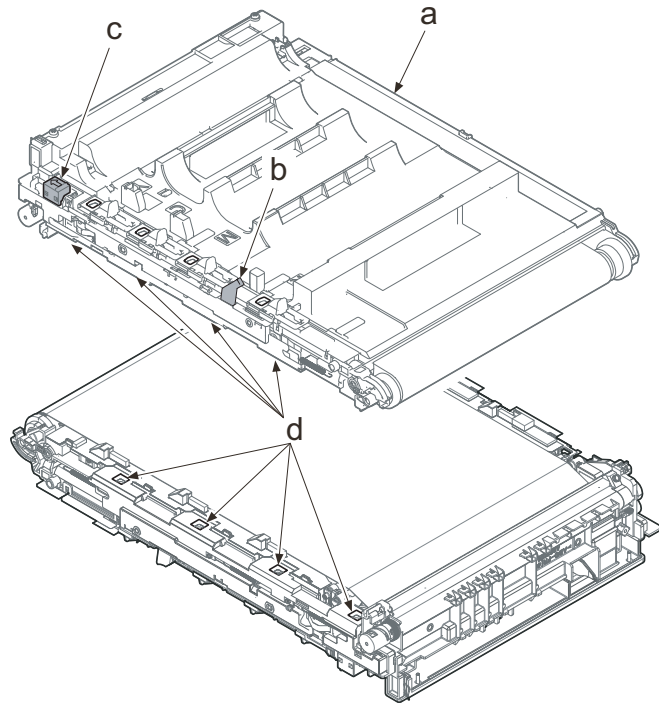


Figure 4-12

**IMPORTANT**

Do not touch the release lever (b) after detaching the primary transfer unit (a).

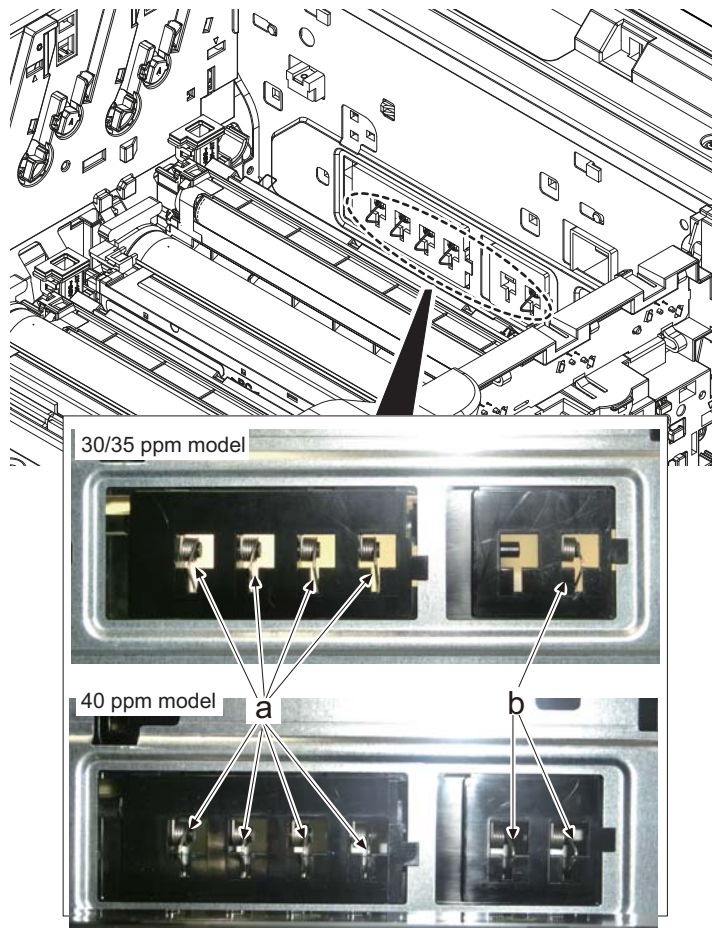
This lever (b) is connected with the shutter lever (c) and so they are released together by installing the toner container into the main unit. The operation mistakenly open the toner feed inlet (d).



**Figure 4-13**

Be sure not to contact / touch the high voltage terminals at the front frame when cleaning the machine inside after detaching the primary transfer unit.

If a high voltage terminal come off, an abnormal image (e.g. vertical streaks) will appear due to the contact failure of the primary transferring (a) or the primary transfer cleaning (b). In that case, the high voltage terminal spring might be deformed due to the shock of coming-off. Then, replace with new high voltage terminal spring (302NR3902\_).



**Figure 4-14**

## (2) Drum section

### (2-1) Detaching and reattaching the drum unit

1. Detach the drum unit (M,C and Y)(a) by pulling it up.  
Lift up the drum unit (K)(b) and pull it toward the machine front side to detach it.

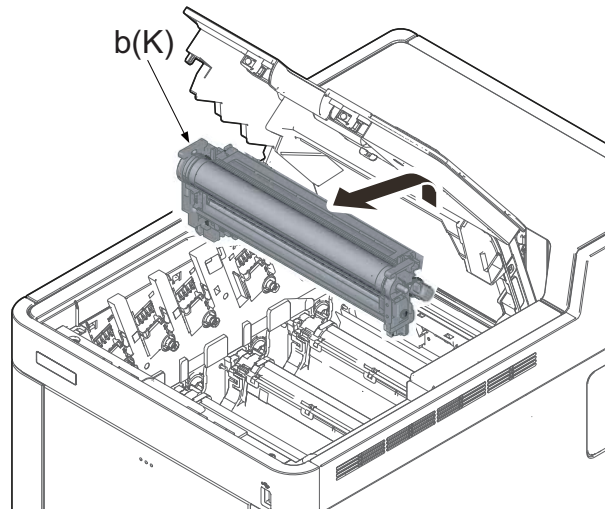
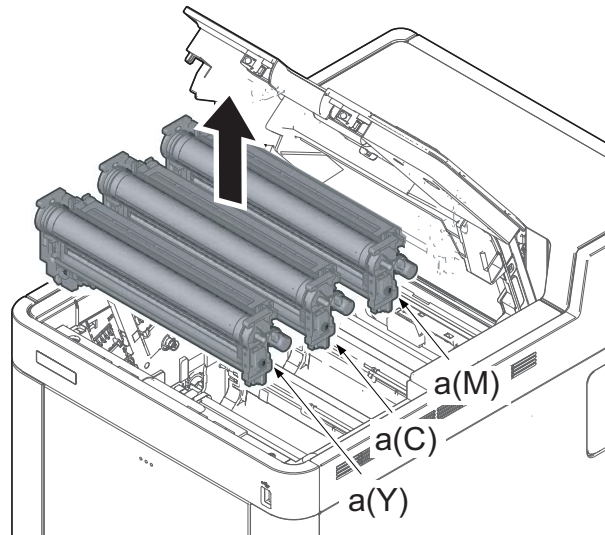


Figure 4-15

\*: Hold the handles (b) on both sides when detaching the drum unit (a).

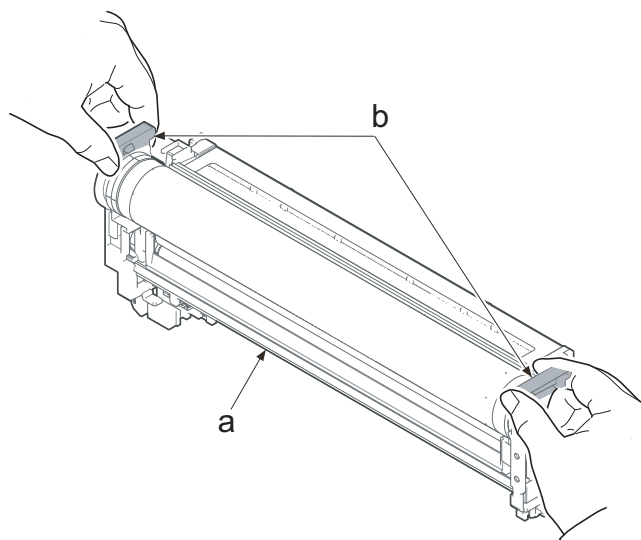


Figure 4-16



\*: When attaching the drum unit (K)(a), tilt it toward you to insert the drum shafts (b) along the rails (c) all the way. Then, make it vertical and push into the main unit.

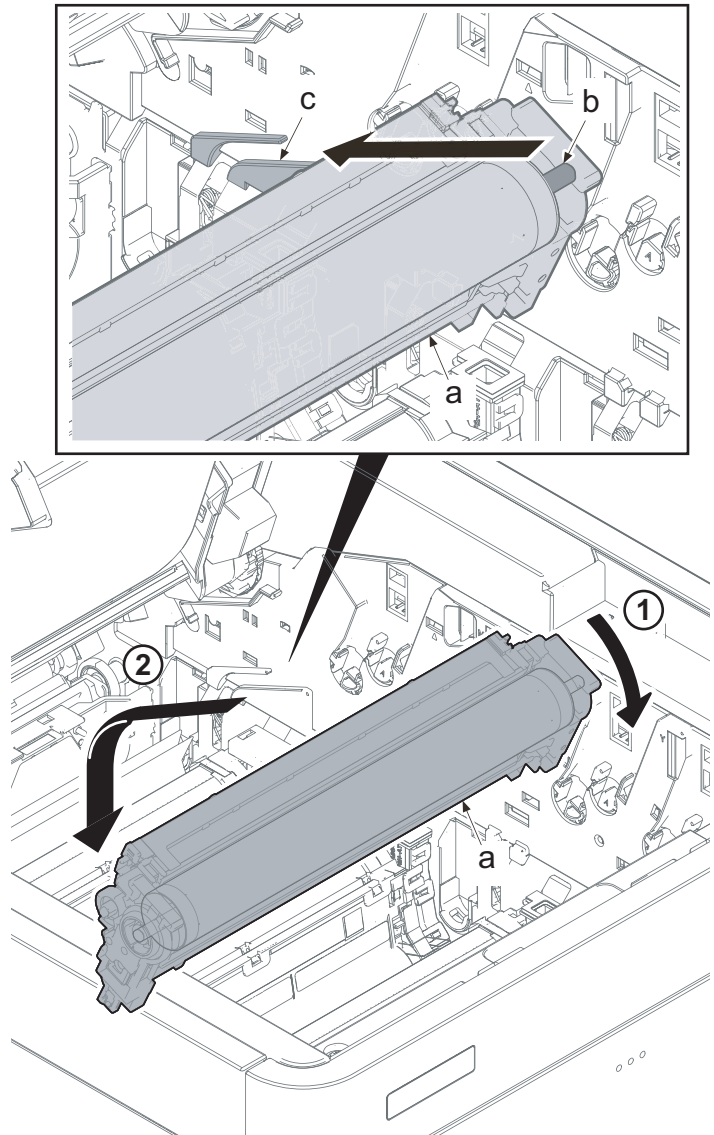


Figure 4-17

### (3) Developer section

#### (3-1) Detaching and reattaching the developer unit

1. Detach the developer unit (K, M, C and Y)(a).

\*: connection portion (b)

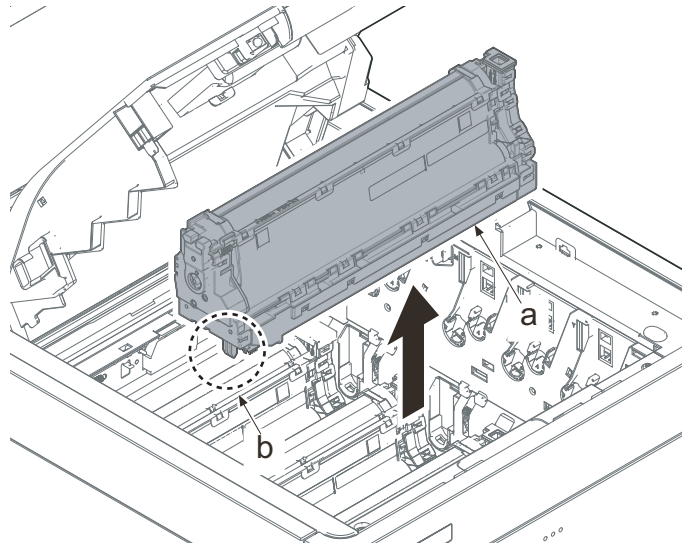


Figure 4-18

\*: When detaching the developer unit (a), hold both the left and right handles (b).

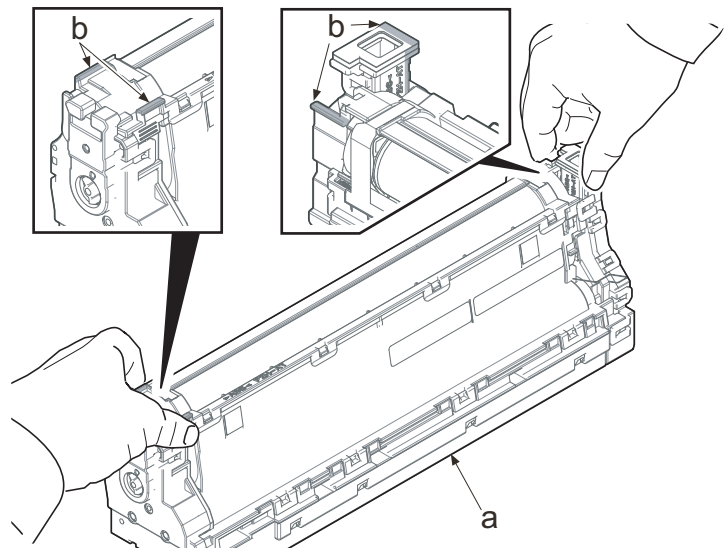


Figure 4-19

\*: Make sure not to touch the gears (a) in the drive section where there is grease.

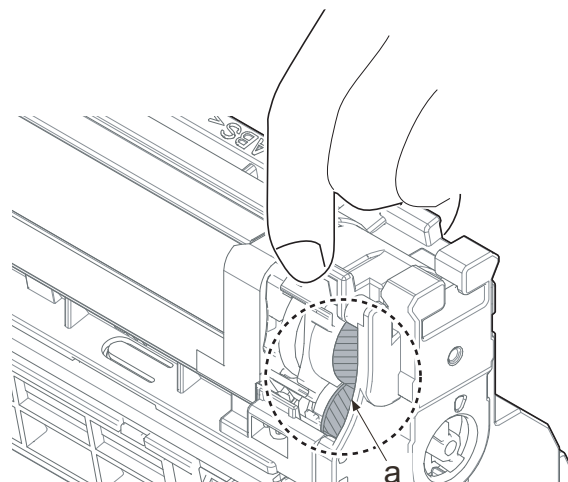
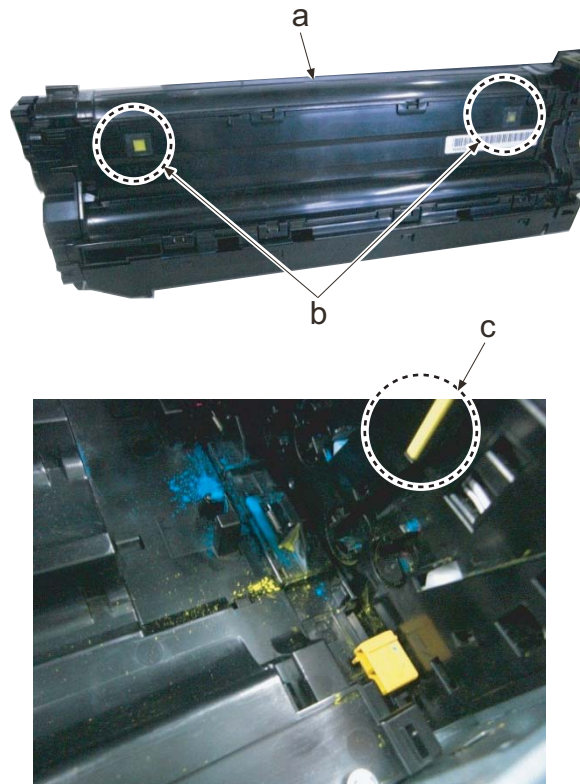


Figure 4-20

2. Detach the developer unit (K, M, C and Y)(a).
3. Reattach the parts in the original position.

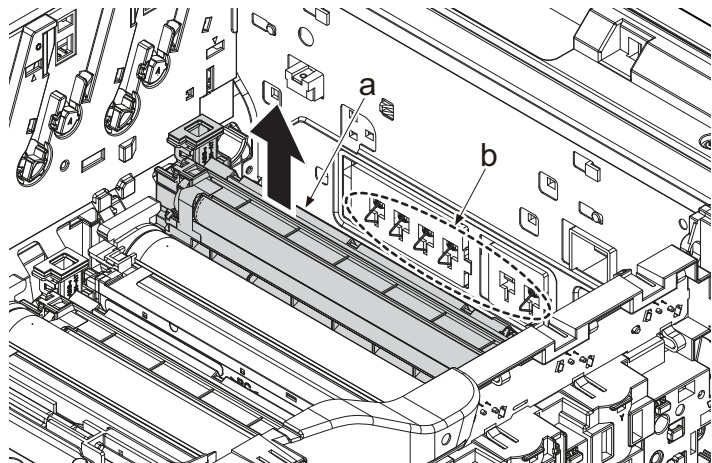
**IMPORTANT**

When attaching the developer unit (a), match the colors between the back side (b) of the developer unit and the right side (c) of the main unit.



**Figure 4-21**

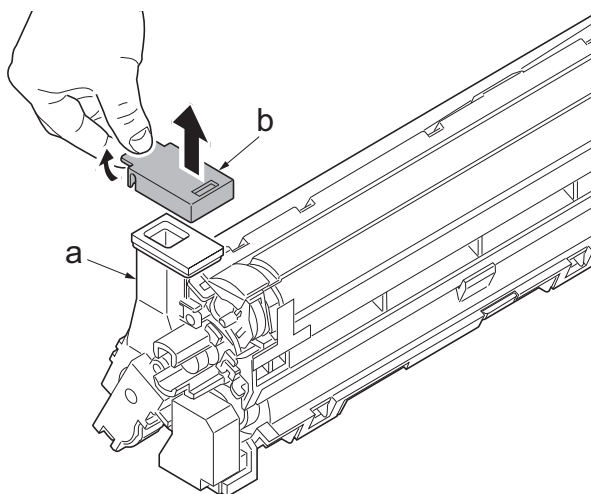
Take care not to touch the transfer high-voltage terminal (b) when attaching/detaching developer unit Y (a). It may cause the contact failure with deformation, etc.



**Figure 4-22**



\*: Remove the cap (b) when attaching the new developer unit (a).



**Figure 4-23**

4. Attach the new drum unit (K,M,C and Y).
5. Reattach the parts in the original position.
6. Attach the new primary transfer unit.
7. Reattach the parts in the original position.
8. Detach the toner containers (K, M, C and Y).
9. Close the top tray.

## (4) Fuser section

### (4-1) Detaching and reattaching the fuser unit

1. Open the rear cover (a).

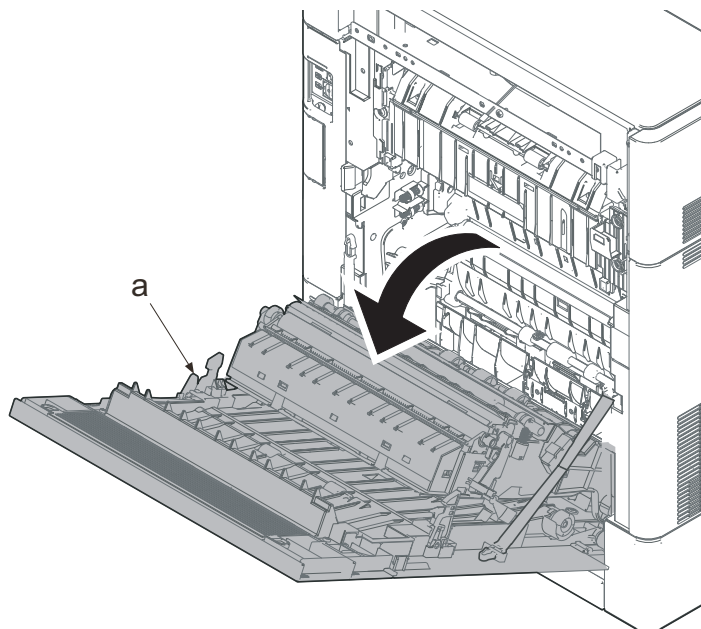


Figure 4-24

2. Pull the lower part of the opening toward the machine rear side and release the hook (a).
3. Remove the interface cover (b).

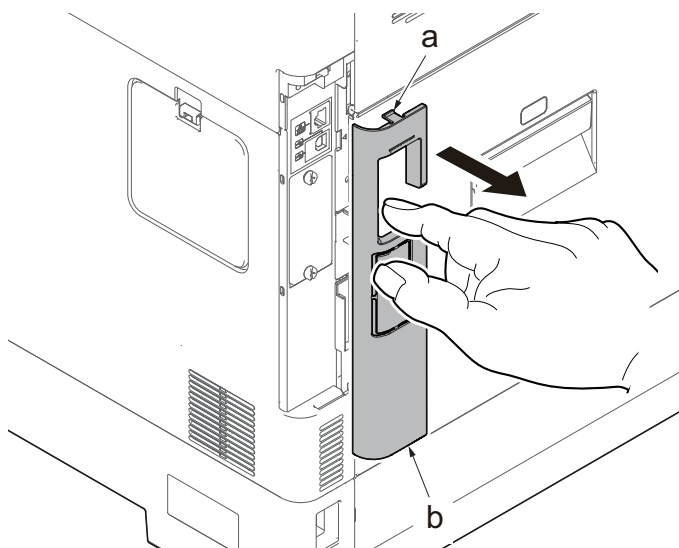


Figure 4-25

4. Remove the screw (a)(M3x8).
5. Remove the fuser wire cover (b).

\*: First insert the hook (c) into the opening (d) and secure the screw.

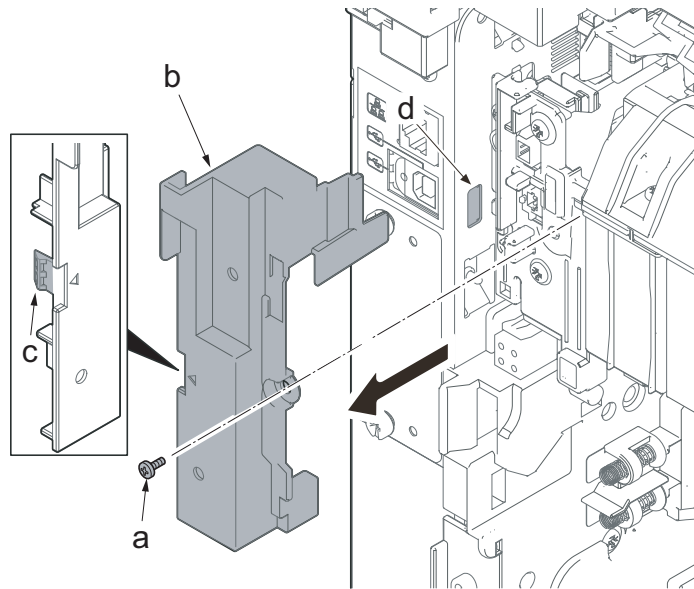


Figure 4-26

6. Disconnect two connectors.
- \*: Disconnect each connector of the exit PWB (a) and the fuser heater (b). Do not disconnect two connectors (c) of the fuser unit.

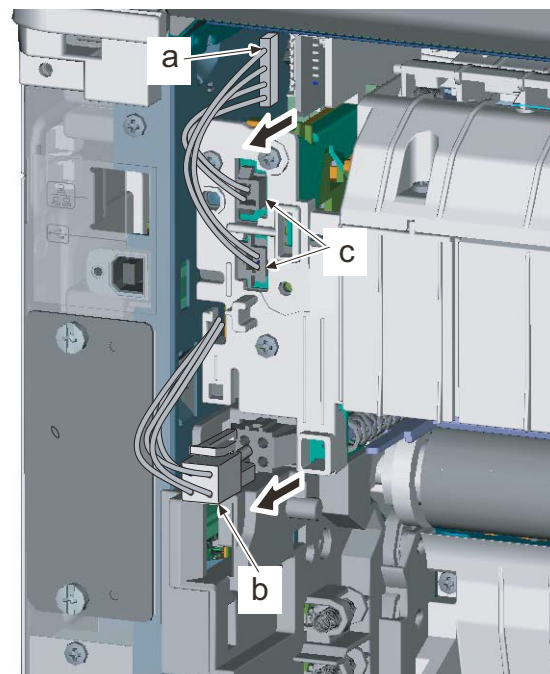


Figure 4-27

7. Remove two screws (a)(M3x8: silver).  
(Screws that are secured at the position with the triangle engraving.)
8. Detach the fuser unit (b).
9. Attach the new fuser unit.
10. Reattach the parts in the original position.

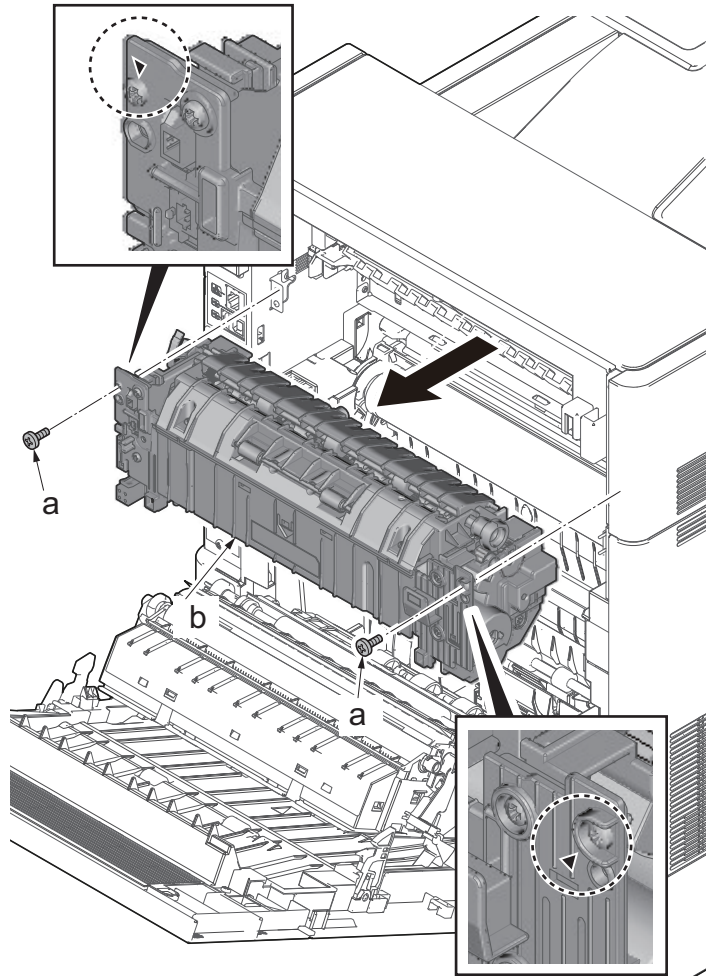


Figure 4-28

**IMPORTANT**

Take care not to touch the connector of the pressure release sensor (b) when fitting the fuser unit (a).  
A service call error may appear if the sensor is disconnected.

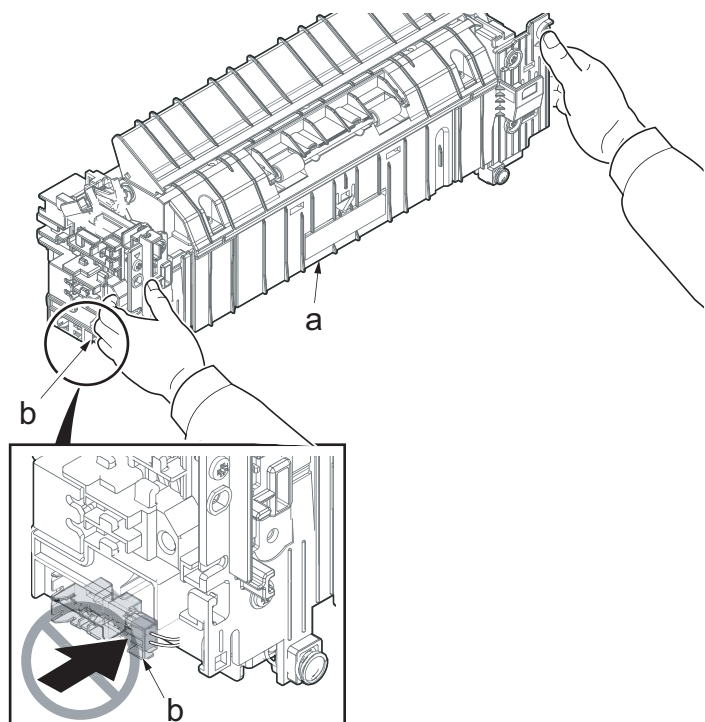


Figure 4-29

When attaching the fuser unit, first secure the screws and connect the connectors. (For prevention of damage from static-electricity)

Before reattaching the fuser wire cover, put the wire (a) in between the ribs (b) so that it is not caught by the fuser wire cover.

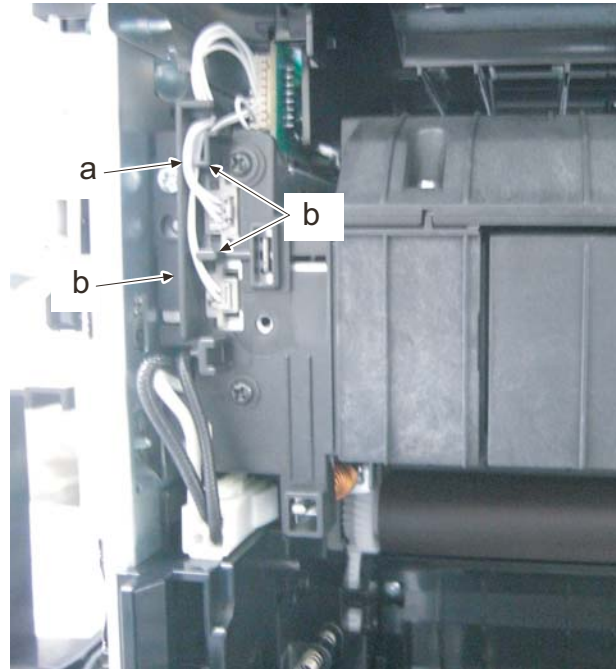


Figure 4-30

## (5) Detaching and reattaching the Retard roller

1. Pull out the cassette (a).

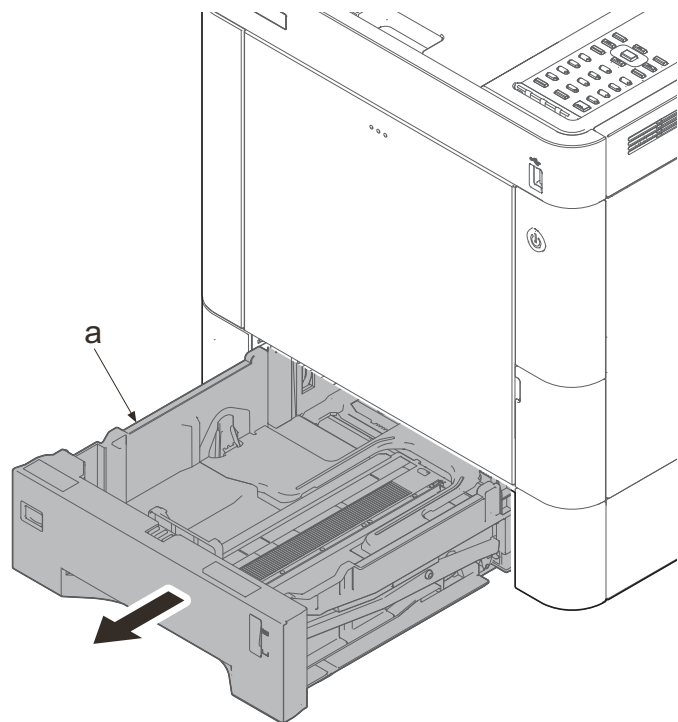


Figure 4-31

2. Pull the conveying stopper (a) toward the machine right side and rotate it by using a flat-blade screwdriver (b).
3. Release the hook (c) of the conveying stopper (a) from the rib (d) and pull the conveying stopper (a) out.

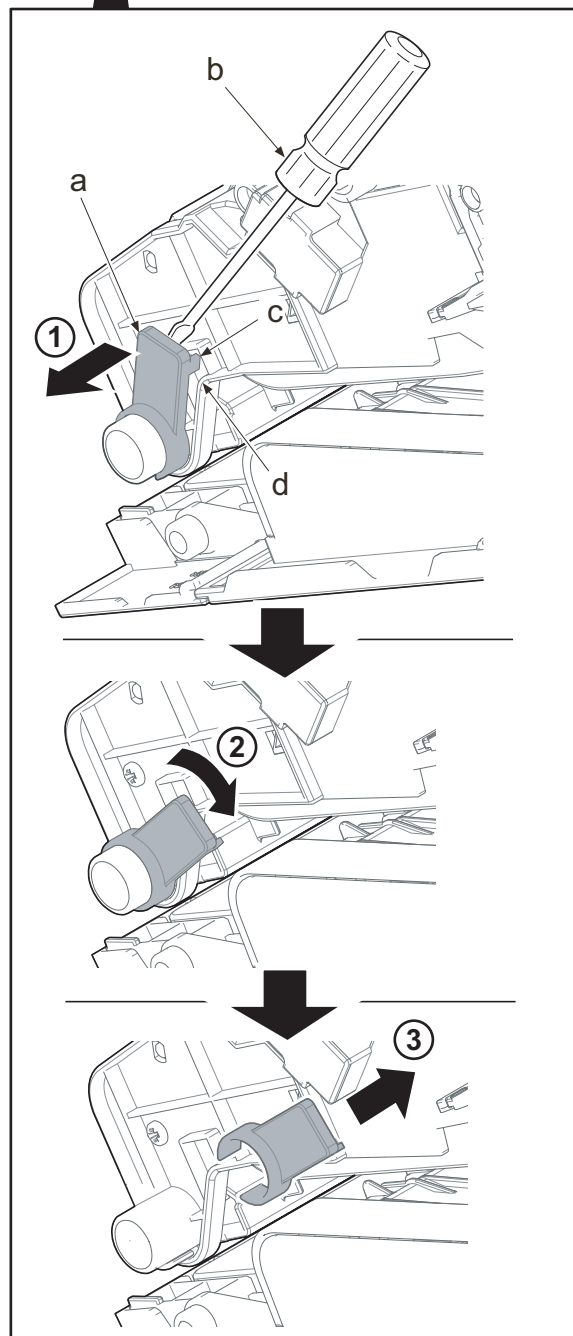
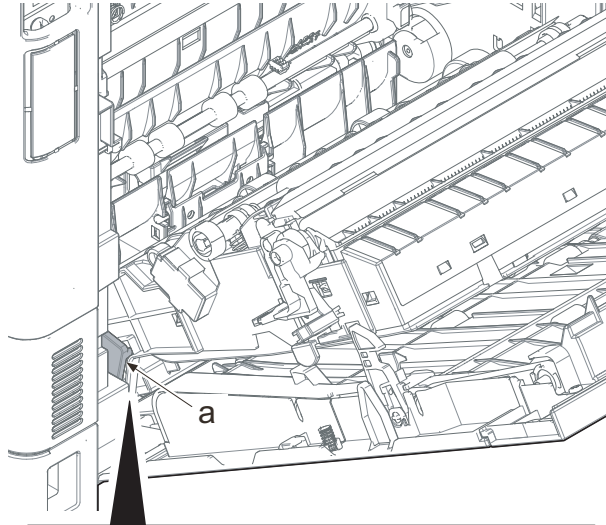


Figure 4-32

4. Slide the duplex paper conveying unit (a) toward the machine right side.
5. Release the fulcrum part of the duplex paper conveying unit (a) at the machine left side, and pull the unit out toward the machine rear side.

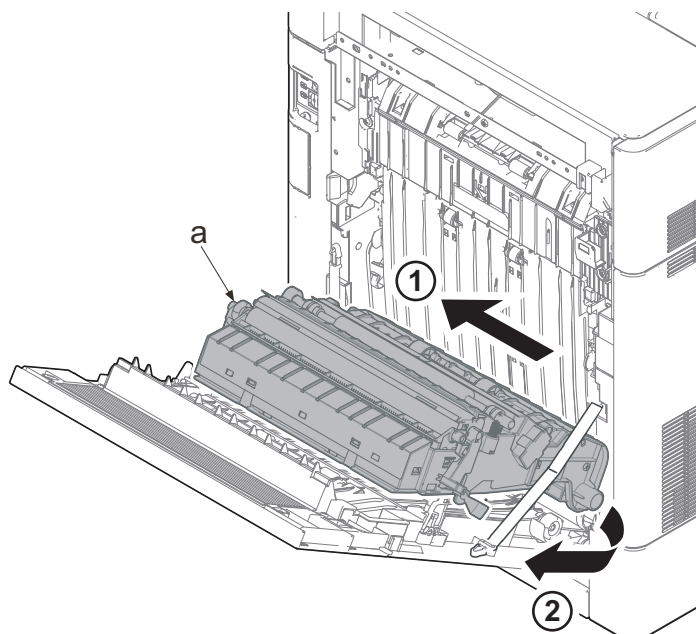


Figure 4-33



6. Release two hooks (a).
7. Remove the retard cover (b) toward you.
- \*: Place the flat-blade screwdriver (c) into the center and remove it by bending it towards the machine rear side.
8. Remove the retard roller unit (d).

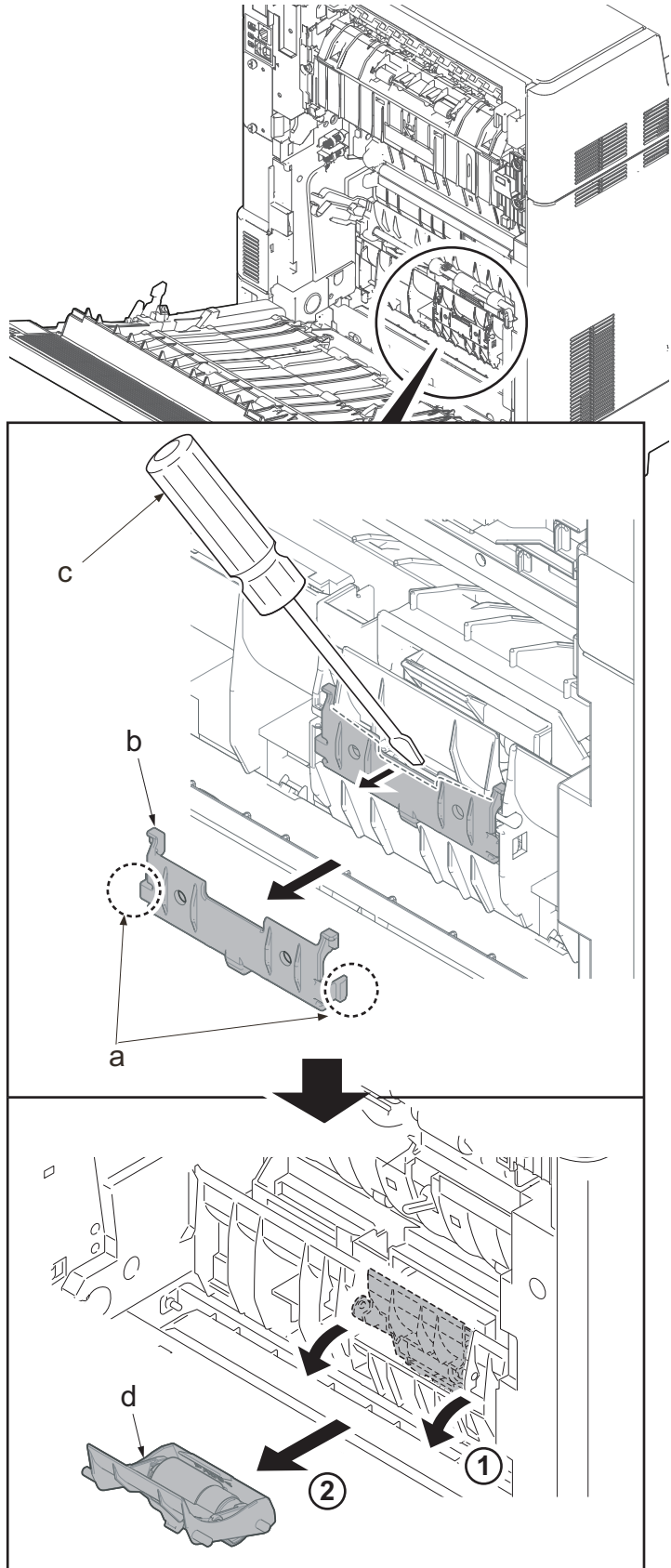


Figure 4-34

**IMPORTANT**

Install the cassette first when attaching the retard roller unit. The retard pressure release lever must be located at the machine front



side from the retard roller unit to apply appropriate pressure.

When reattaching the retard cover (a), fasten two upper hooks (b) and then push the retard cover to fasten two lower hooks (c). Check if four hooks (b and c) are surely fastened after reattaching it.

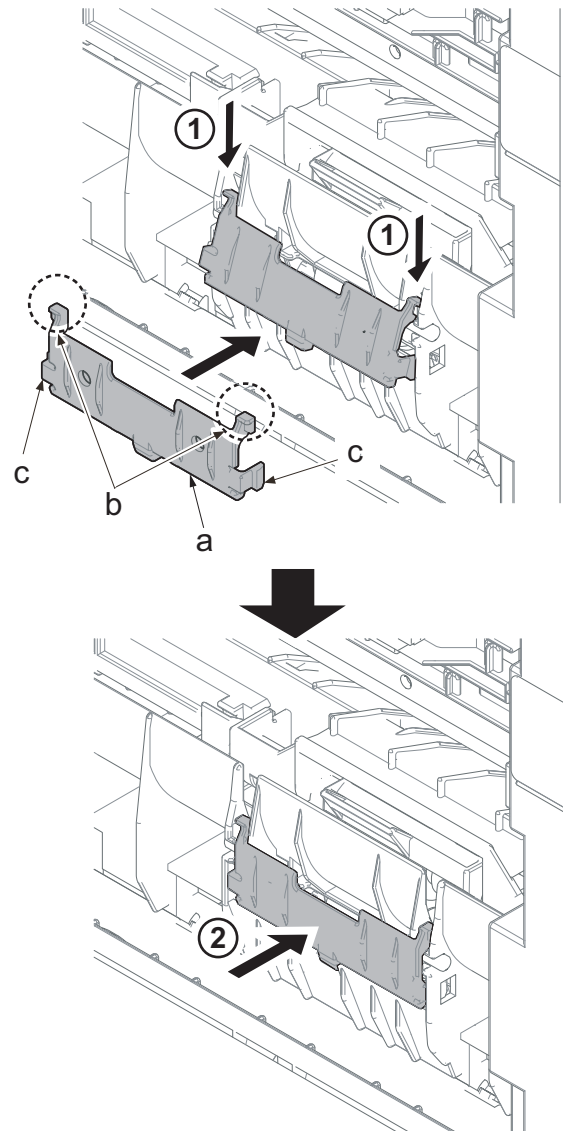


Figure 4-35

## (6) Detaching and reattaching the paper feed roller unit

1. Push the machine right side hook (a) outward using a flat-blade screwdriver (b).

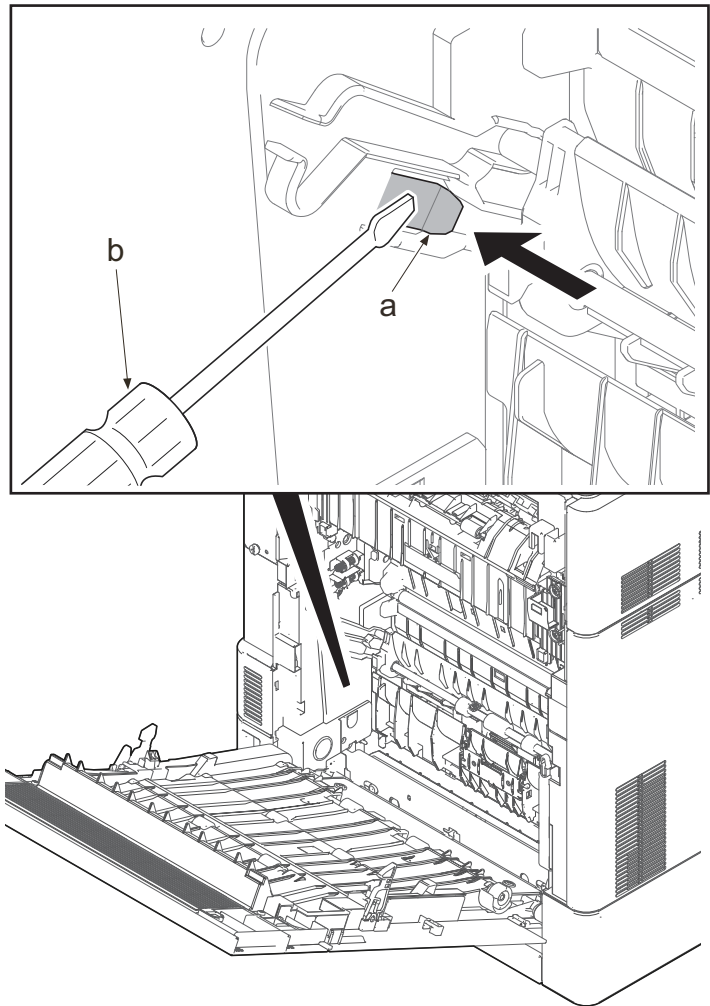


Figure 4-36

2. Pull the middle roller unit (b) out by holding handle A2 (a).

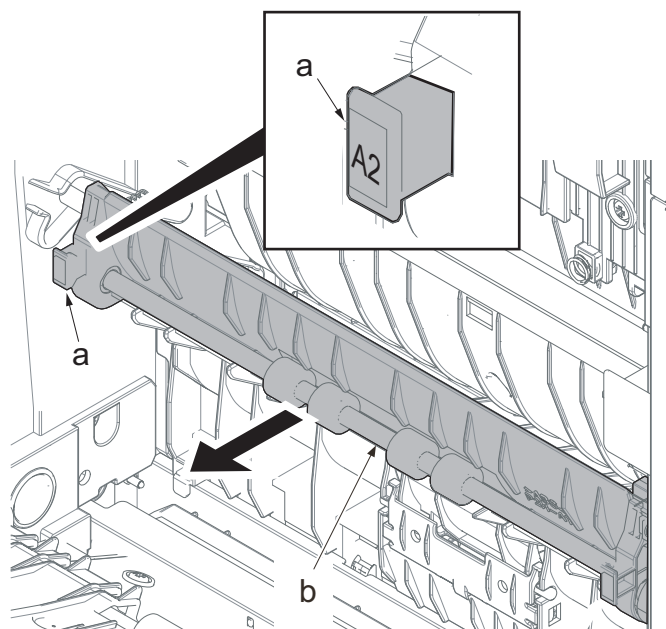


Figure 4-37

3. Remove the machine right side shaft (b) of the middle roller unit (a) from the rail (c).
4. Detach the middle roller unit (a).

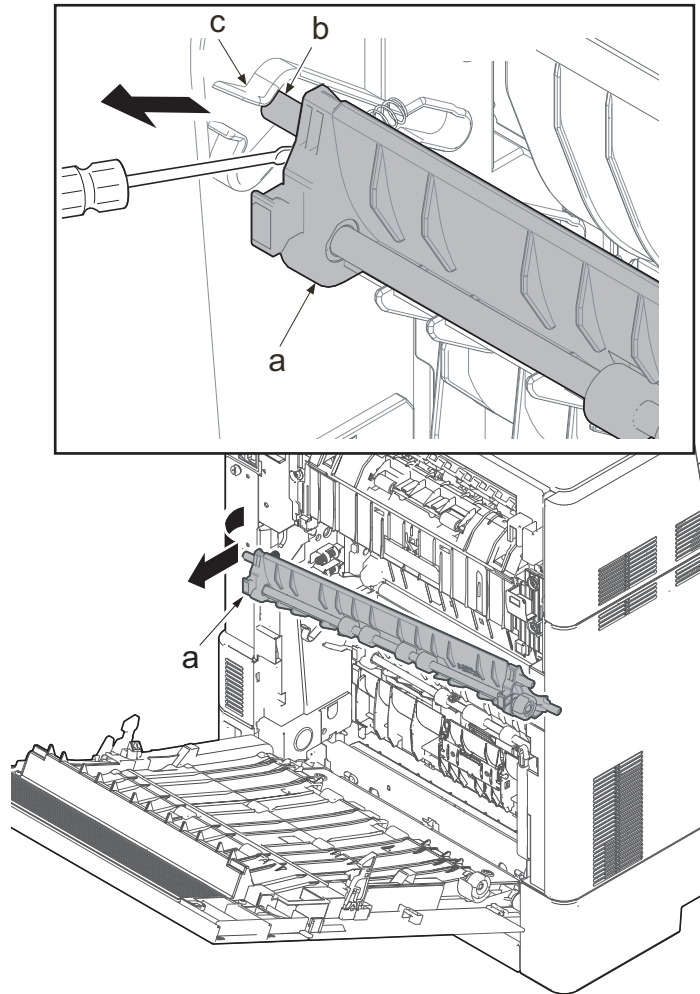


Figure 4-38

5. Rotate the lever (b) of the paper feed roller pin (a) toward the machine rear side.
6. Slide the paper feed roller pin (a) toward the machine front side.

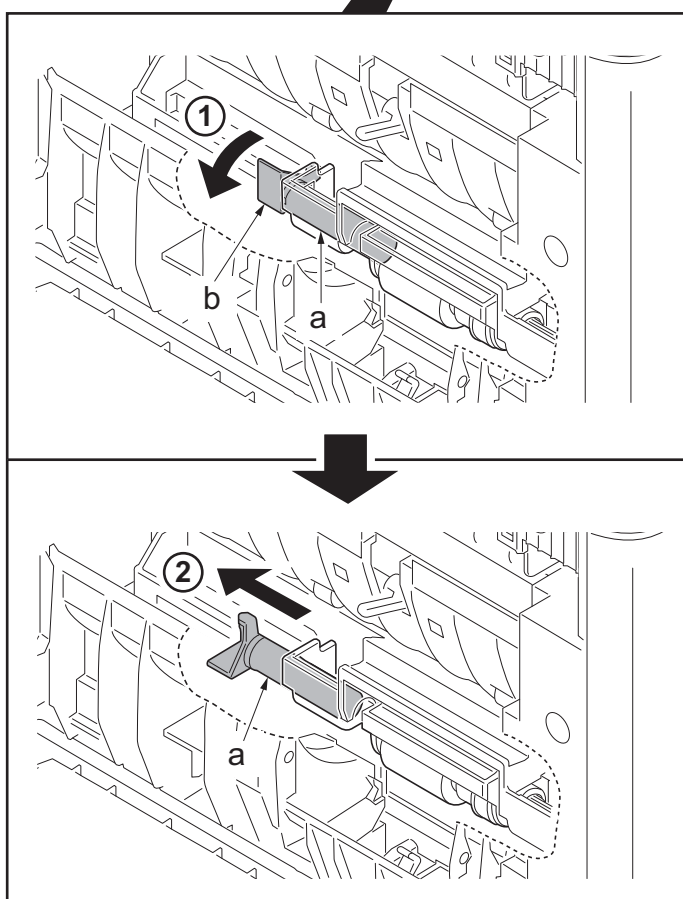
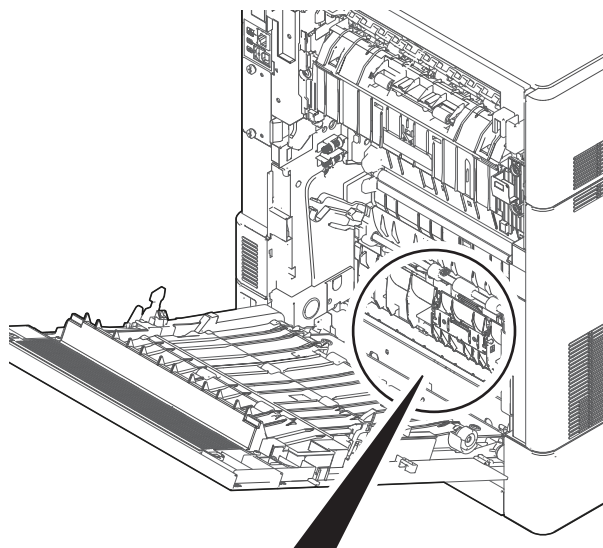


Figure 4-39

7. Detach the paper feed roller unit (a).
- \*: Make sure it should not come off/be lost when attaching/detaching the paper feed roller unit (a).
8. Attach the new feed roller unit.
9. Reattach the parts in the original position.
10. Attach the new retard roller unit.
11. Reattach the parts in the original position.

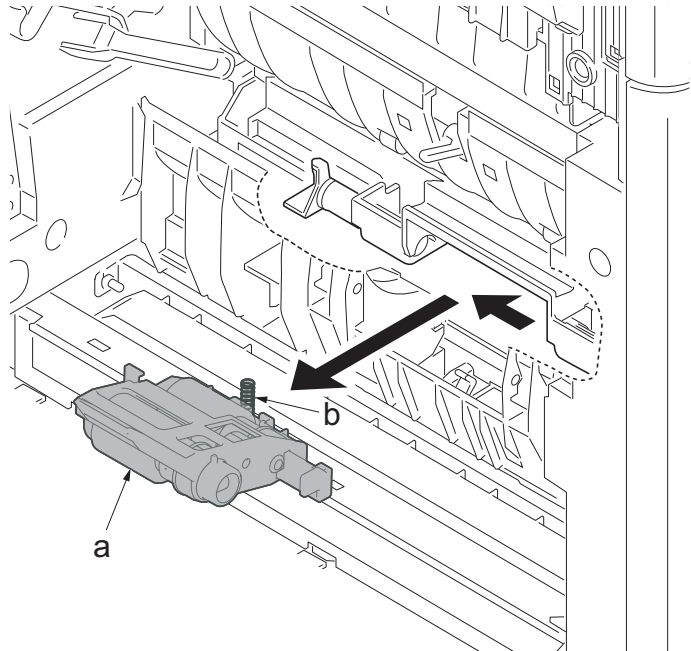


Figure 4-40

**IMPORTANT**

When attaching the paper feed roller unit, make sure to check if the pickup spring is attached correctly.

**The way to attach the pickup spring**

Insert the pickup spring (b) into the cross-shape boss of the feeding holder (a) and press the spring until the edge of the spring contacts on the surface (c) of the paper feeding holder.

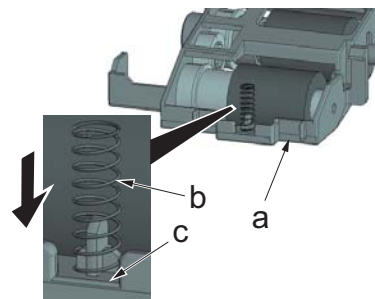


Figure 4-41

**The way to attach the pickup spring**

After attaching the paper feed roller unit (a), touch your fingertips at the bottom of the pickup roller of it and feel the rebound of the spring if pressing to the upper direction.

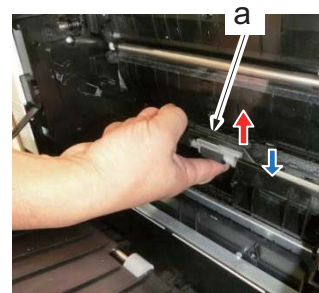


Figure 4-42

## (7) Detaching and reattaching the secondary transfer roller unit

1. Release two hooks (b) of the duplex paper conveying unit (a).
2. Detach the secondary transfer roller unit (c).
3. Attach the new secondary transfer roller unit (c).
4. Reattach the parts in the original position.
5. Reattach the duplex conveying unit in the reverse order of removal.
6. Close the rear cover.

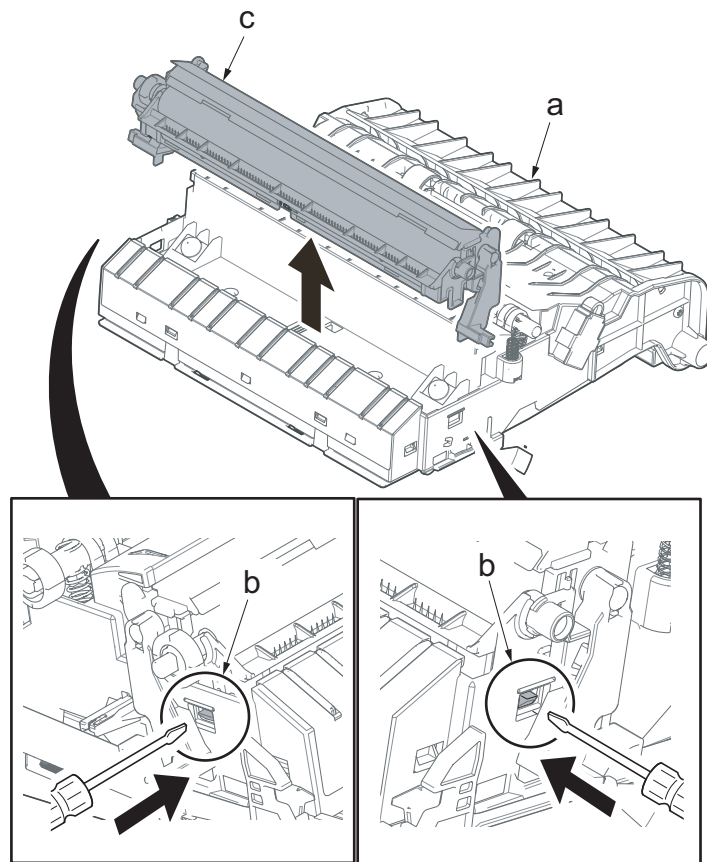
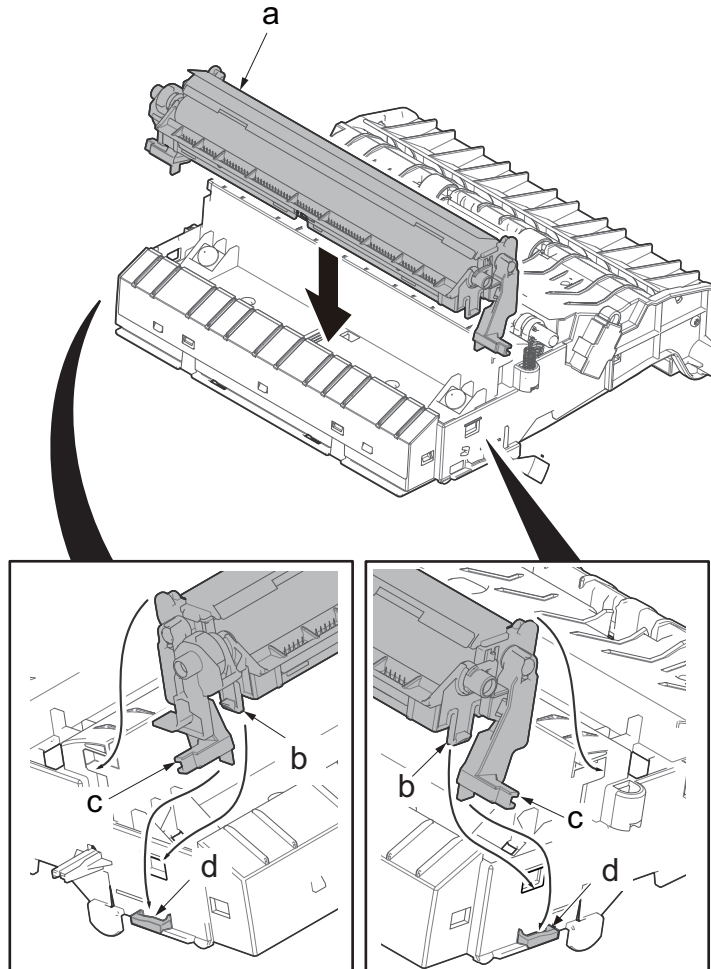


Figure 4-43

**IMPORTANT**

When reattaching the secondary transfer roller unit (a), first fit the upper part and then insert the hook (b) into the square hole.

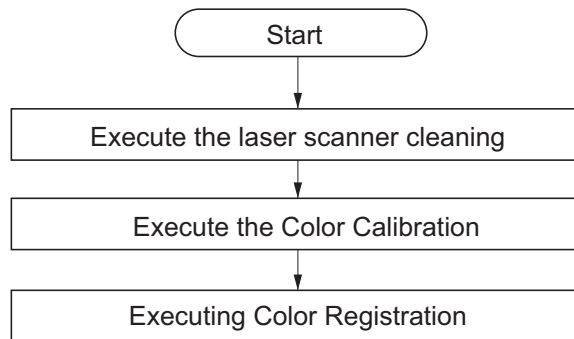
Then, insert each hook (c) of both transfer release levers into the inside ribs (d).



**Figure 4-44**

## (8) Adjustment procedures after replacing the maintenance kit

Execute the following procedures after replacing the above maintenance kit.



### 1. Execute the laser scanner cleaning

#### 30 ppm model

(1) Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key > [▲][▼] key > [Service Setting] > [▶] key

(2) Adjust

[▲][▼] key > [LSU] > [OK] key > [OK] key

Laser scanner cleaning is executed and [Service Setting] is displayed when completing it.

#### 35/40 ppm model

(1) Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [OK] key > [▲][▼] key > [Service Setting] > [OK] key > [▲][▼] key > [LSU] > [OK] key

(2) Adjust

Select [Execute]. The laser scanner cleaning is started.

### 2. Execute the Color Calibration

#### 30 ppm model

(1) Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key

(2) Adjust

[▲][▼] key > [Color Calibration] > [OK] key > [OK] key

[Color Calibration] is executed and [Adjustment/Maintenance] is displayed when completing it.

#### 35/40 ppm model

(1) Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [OK] key > [▲][▼] key > [Color Calibration] > [OK] key

(2) Adjust

Select [Yes] to execute the color calibration.

[Color Calibration] is executed and [Adjustment/Maintenance] is displayed when completing it.



### 3. Execute the Color Registration

#### **Normal correction**

##### **30 ppm model**

(1) Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key > [▲][▼] key > [Color Registration(Normal)] > [▶] key

(2) Print chart

[▲][▼] key > [Print chart] > [OK] key > [OK] key

The charts are printed. The chart indicating H-L (left), V (center) and H-R (right) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

##### **35/40 ppm model**

(1) Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [OK] key > [▲][▼] key > [Color Registration] > [OK] key > [▲][▼] key > [Normal] > [OK] key

(2) Print chart

[▲][▼] key > [Print chart] > [OK] key > [Yes]

The charts are printed. The chart indicating H-L (left), V (center) and H-R (right) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

After printing, the color registration correction (Normal) is displayed.

Chart sample (normal)

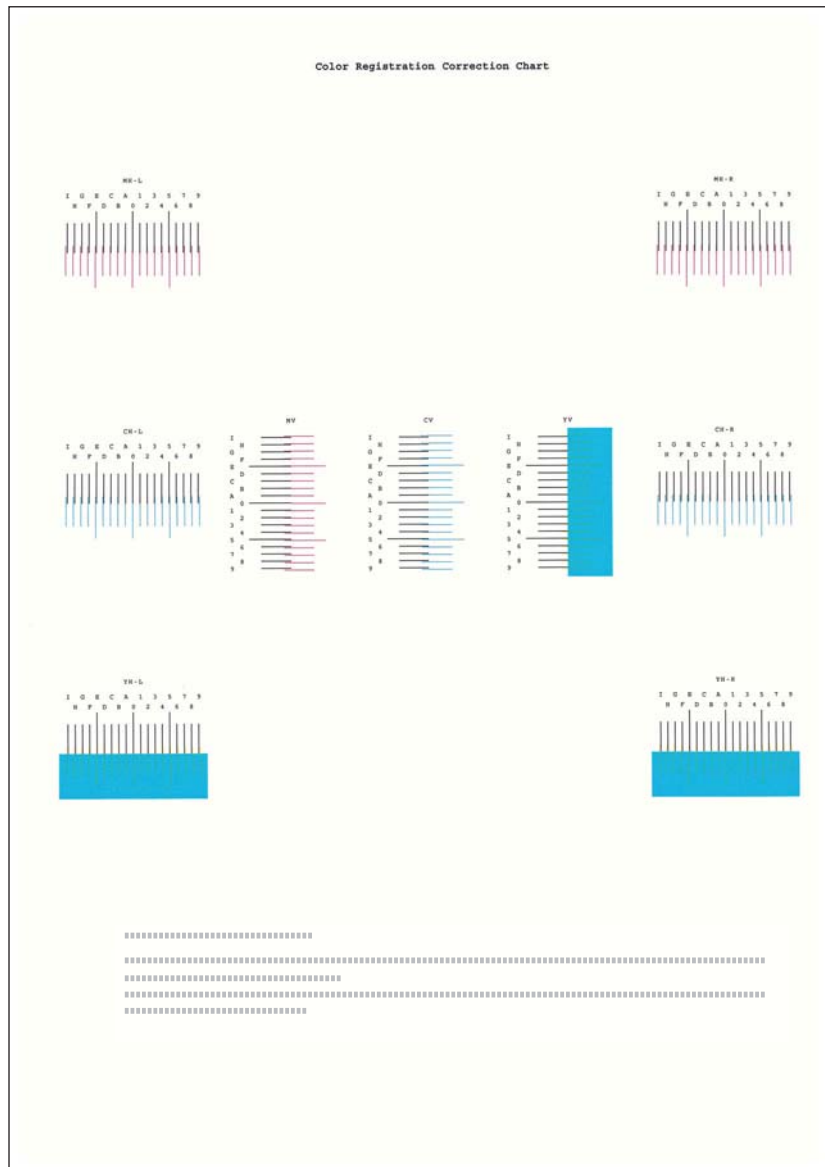


Figure 4-45

30 ppm model

(3) Indicate the correction menu.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key > [▲][▼] key > [Color Registration(Normal)] > [▶] key [▲][▼] key > [Magenta] > [OK] key  
The correction menu for Magenta is displayed.

(4) Input values.

1. Find the positions where two lines are best matched on each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

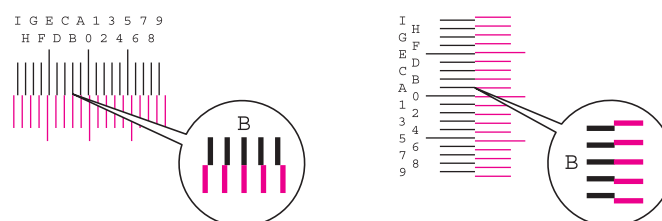


Figure 4-46

2. Select [◀] or [▶] key to change the values of H, L and V. Select [▲] or [▼] key to input the values read from the chart and press [OK] key.  
Select [▲] key to shift the value 0 to 9. Select [▼] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.
3. Select the [OK] key.  
The correction for Magenta will be completed.
4. Repeat step 3 and 4 to adjust Cyan and Yellow.

### 35/40 ppm model

(3) Indicate the correction menu.

- [▲][▼] key > [Magenta] > [OK] key  
The correction menu for Magenta is displayed.

(4) Input values.

1. Find the point where two lines are most aligned from each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

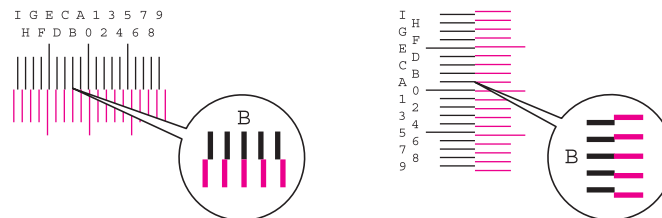


Figure 4-47

2. Select [◀] or [▶] key to change the values of H, L and V. Select [▲] or [▼] key to input the values read from the chart and press [OK] key.  
Select [▲] key to shift the value 0 to 9. Select [▼] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.  
Numeric keys input is not available.
3. Repeat step 3 and 4 to adjust Cyan and Yellow.

### Detailed settings

#### 30 ppm model

(1) Display the screen.

- [Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key > [▲][▼] key > [Color Registration(Detail)] > [▶] key

(2) Print chart

- [▲][▼] key > [Print chart] > [OK] key > [OK] key  
The charts are printed. The chart indicating H1 to H5 (upper) and V1 to V5 (lower) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

#### 35/40 ppm model

(1) Display the screen.

- [Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [OK] key > [▲][▼] key > [Color Registration] > [OK] key > [▲][▼] key > [Detail] > [OK] key

(2) Print chart

- [▲][▼] key > [Print chart] > [OK] key > [Yes]  
The charts are printed. The chart indicating H1 to H5 (upper) and V1 to V5 (lower) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.  
After printing, the color registration correction (Detail) is displayed.

Chart sample (detail)

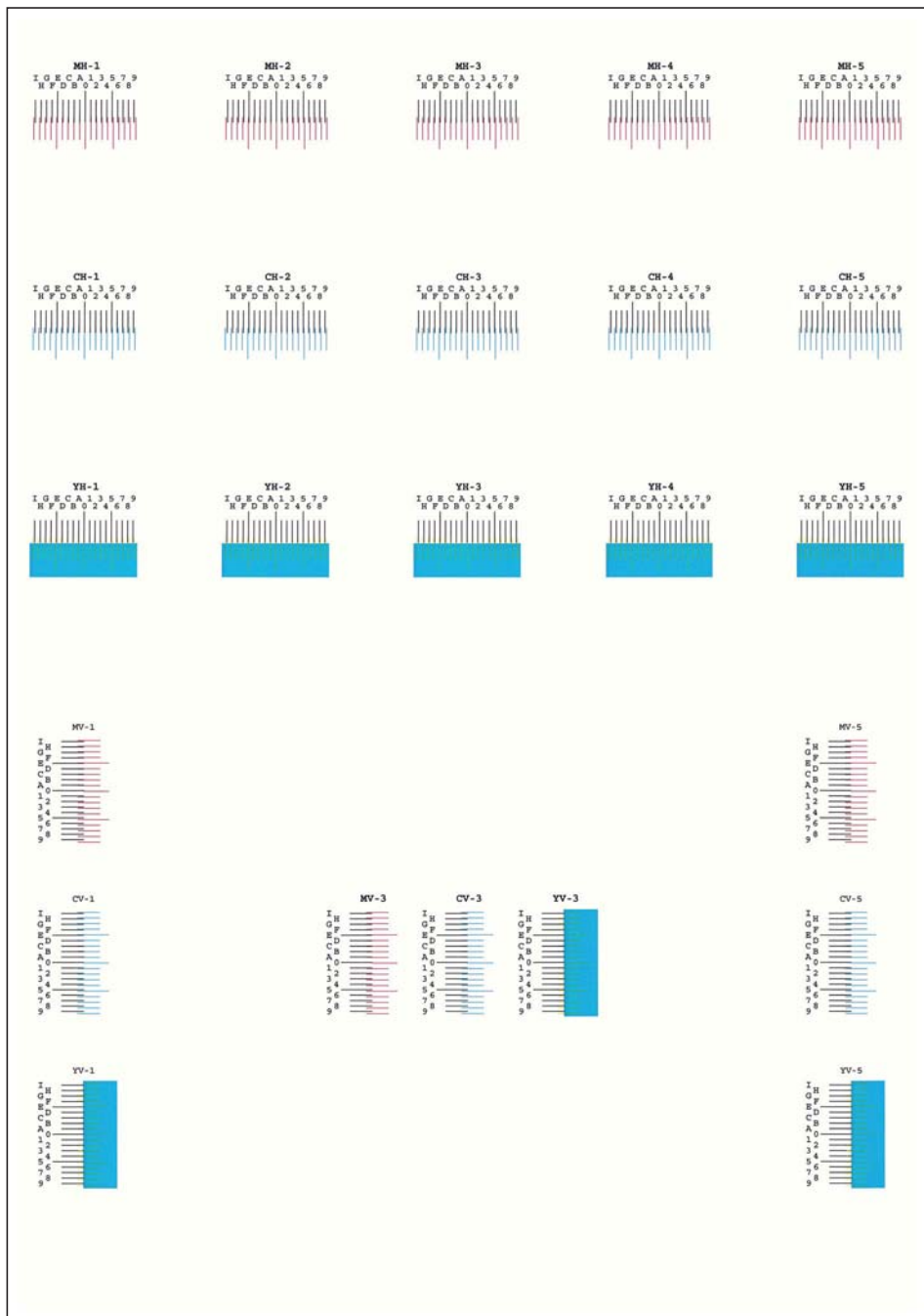


Figure 4-48

**30 ppm model**

(3) Indicate the correction menu.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key > [▲][▼] key > [Color Registration(Detail)] > [▶] key [▲][▼] key > [Magenta] > [OK] key  
The correction menu for Magenta is displayed.

(4) Input values.

1. Find the positions where two lines are best matched on each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.  
Read the values from H1 to H5 in the chart.  
Read the value of V-3 (center) only of V1 to V5 in the chart.

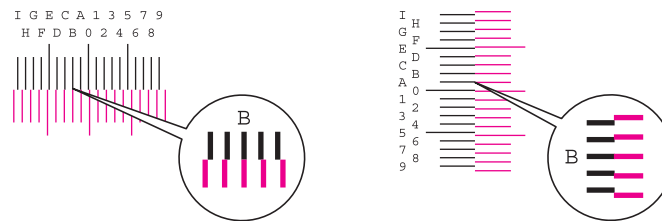


Figure 4-49

2. Select [◀] or [▶] key to change the values of H and V. Select [▲] or [▼] key to input the values read from the chart and press [OK] key.  
Select [▲] key to shift the value 0 to 9. Select [▼] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.
3. Select the [OK] key.  
The correction for Magenta will be completed.
4. Repeat step 3 and 4 to adjust Cyan and Yellow.

### 35/40 ppm model

(3) Indicate the correction menu.

[▲][▼] key > [Magenta] > [OK] key

(4) Input values.

1. Find the positions where two lines are best matched on each chart. If it is at "0", the correction is unnecessary. In case of the illustration, "B" is the value that should be set.  
Read the values from H1 to H5 in the chart.  
Read the value of V-3 (center) only of V1 to V5 in the chart.

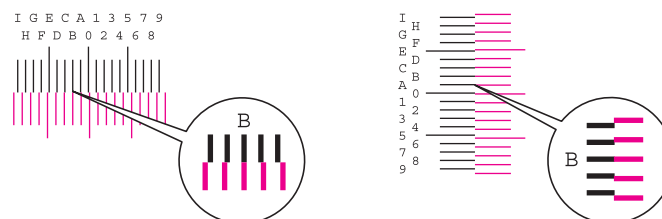


Figure 4-50

2. Select [◀] or [▶] key to change the values of H-1 to H-5 and V-3. Select [▲] or [▼] key to input the values read from the chart and press [OK] key.  
After a while completing the Magenta correction, the color registration correction (Detail) is displayed.  
Select [▲] key to shift the value 0 to 9. Select [▼] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.  
Numeric keys input is not available.
3. Repeat step 3 and 4 to adjust Cyan and Yellow.

## 4-4 Disassembly and Reassembly procedures

### (1) External covers

#### (1-1) Detaching and reattaching the front cover

1. Lift the handle (a) and open the top tray (b).

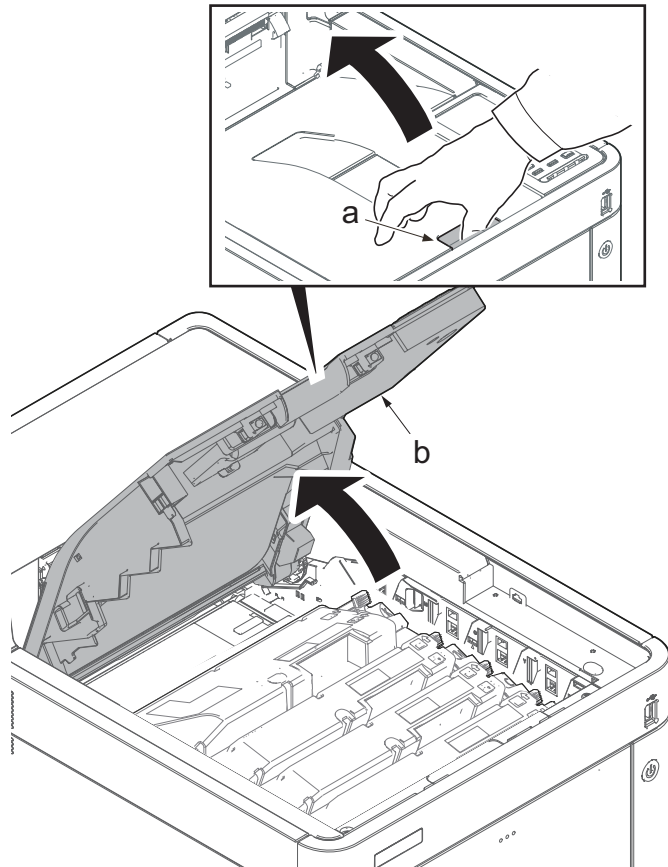


Figure 4-51

2. Open the MP tray (a).
3. Remove two screws (b)(M3x8).
4. Open the waste toner cover (c).

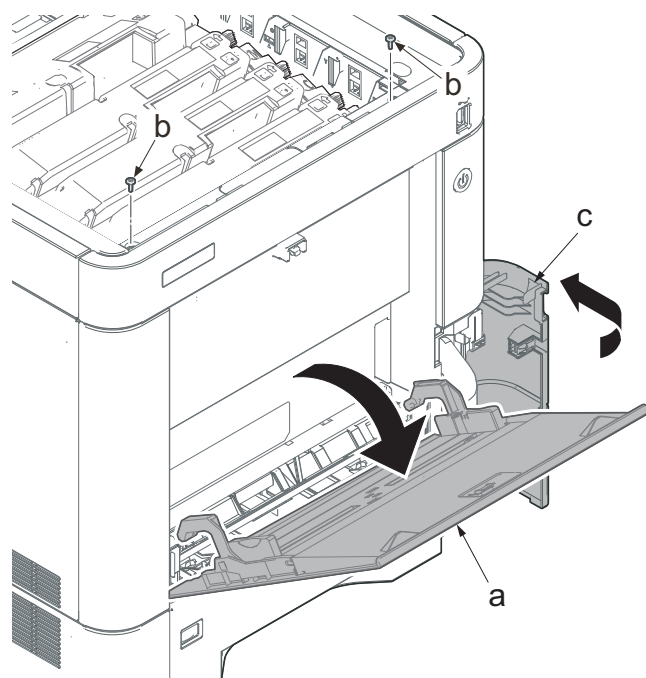


Figure 4-52

5. Slightly lift up the front cover (a) to release the boss (b).
6. Tilt the front cover (a) toward the machine front side.
7. Then, remove the front cover (a) by lifting it up.

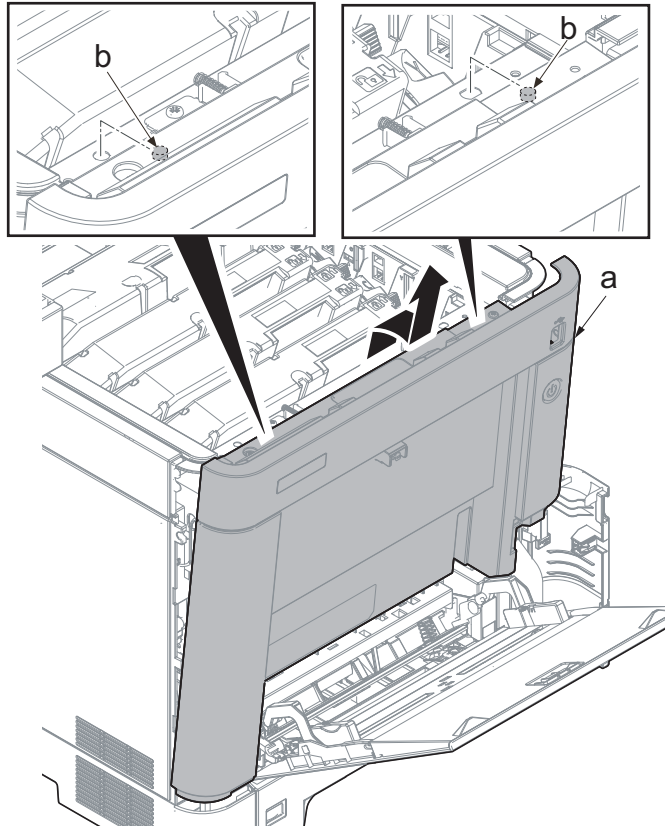


Figure 4-53

**IMPORTANT**

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, "cover open" will be displayed.

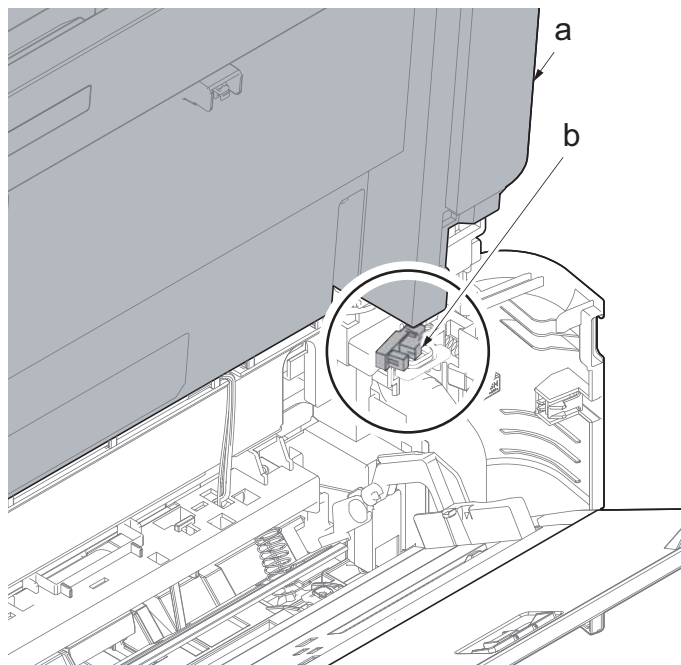


Figure 4-54

### (1-2) Detaching and reattaching the interface cover.

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

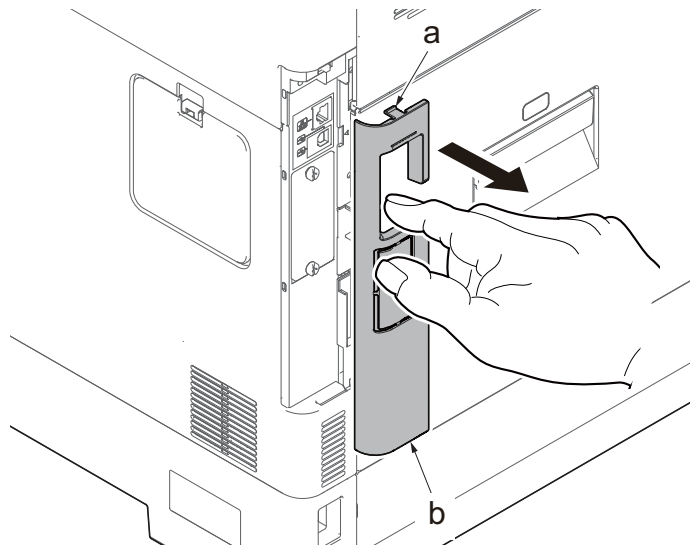


Figure 4-55

### (1-3) Detaching and reattaching the upper right cover

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

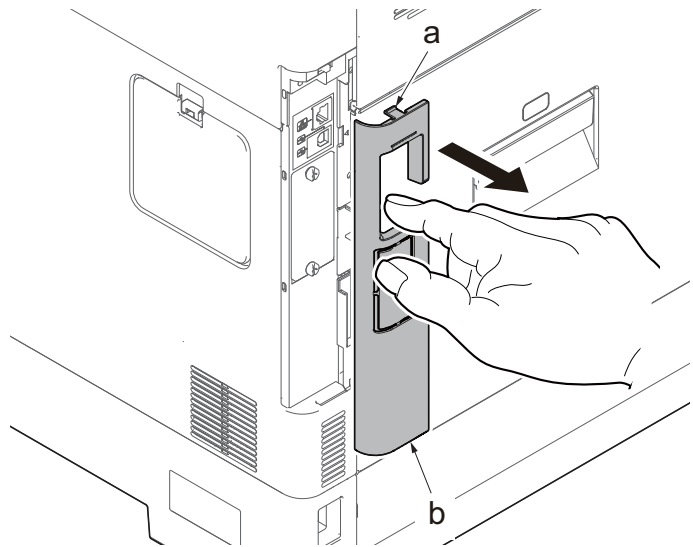
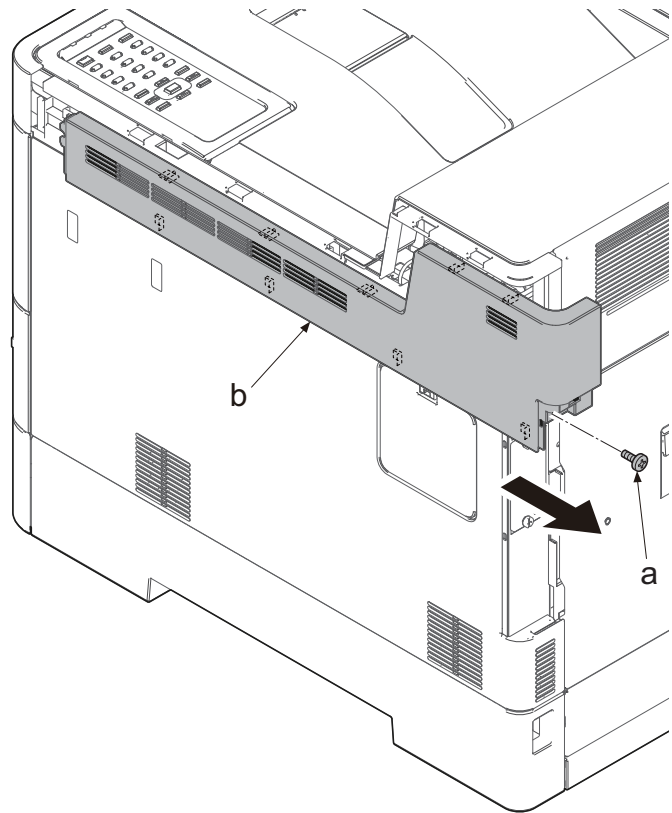


Figure 4-56



**35/40 ppm model**

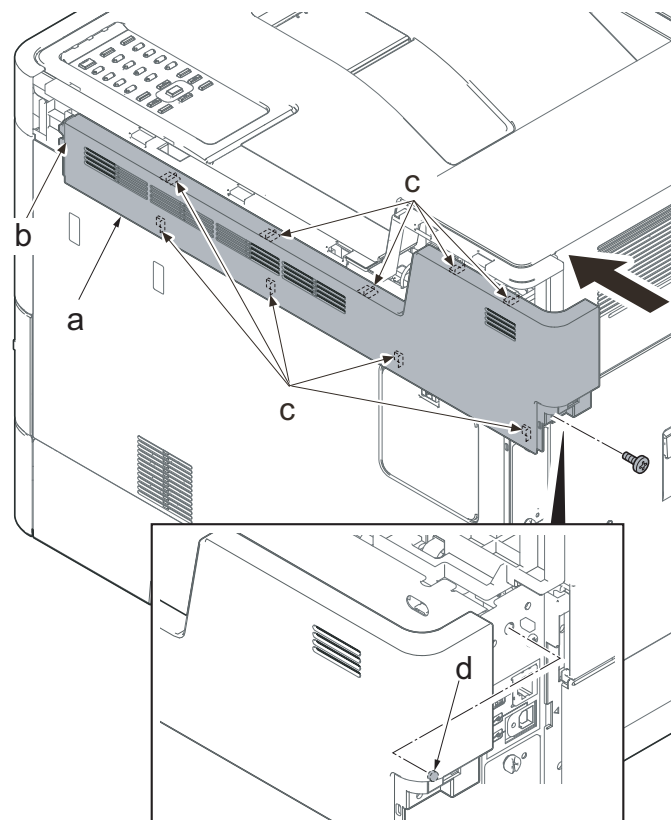
3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.



**Figure 4-57**

**IMPORTANT**

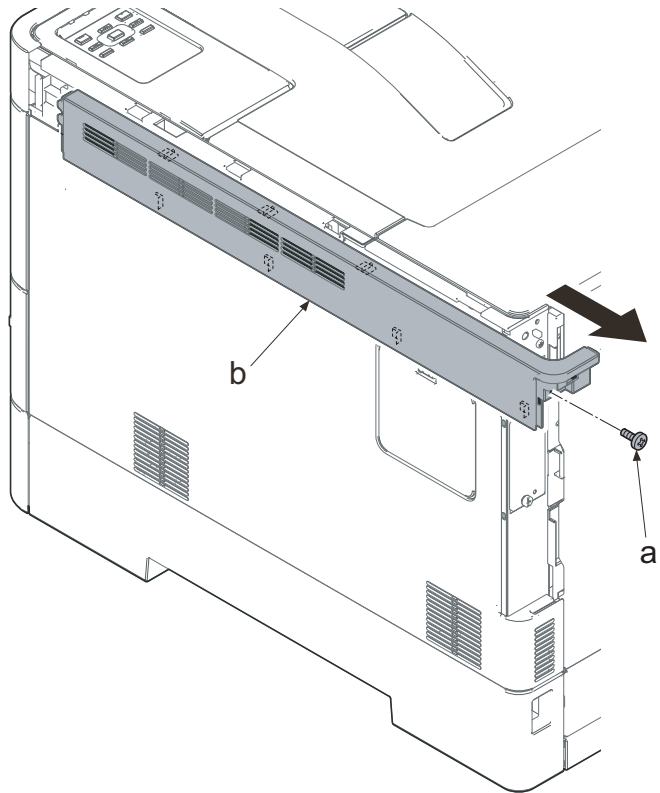
When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-58**

**30 ppm model**

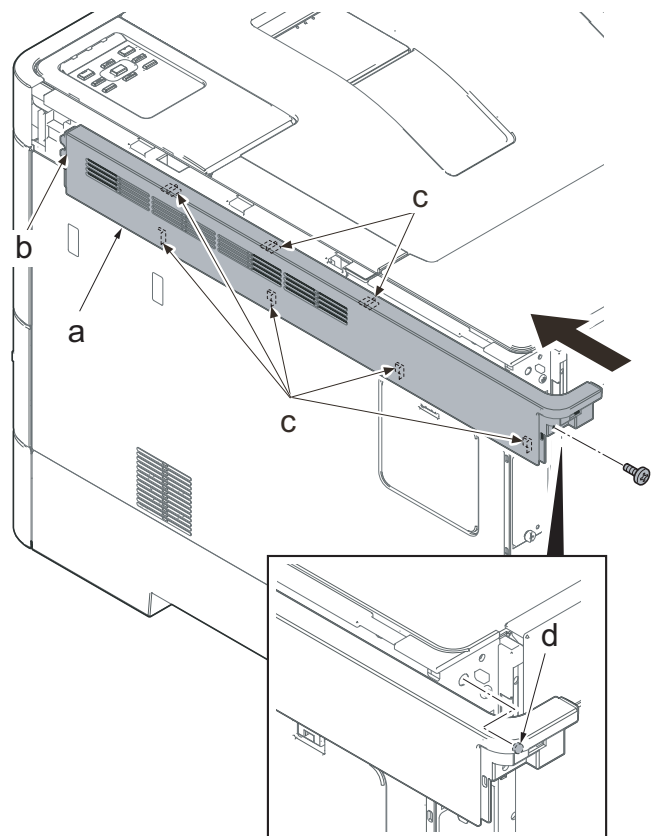
3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.



**Figure 4-59**

**IMPORTANT**

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten seven hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-60**

### (1-4) Detaching and reattaching the middle right cover

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

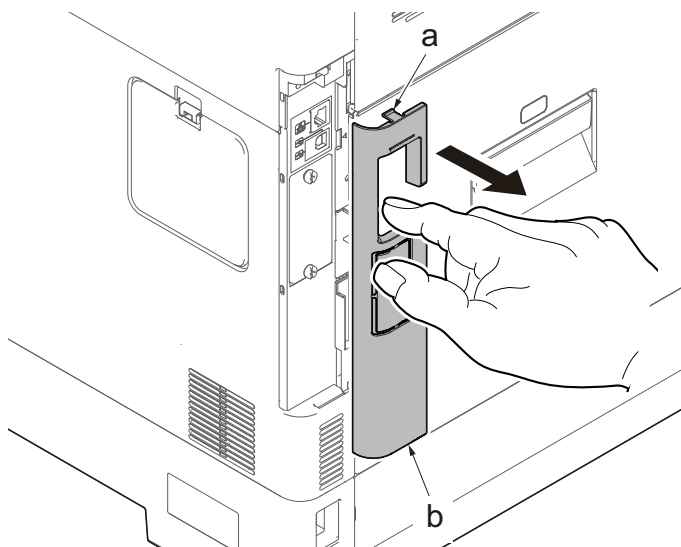


Figure 4-61

#### 35/40 ppm model

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

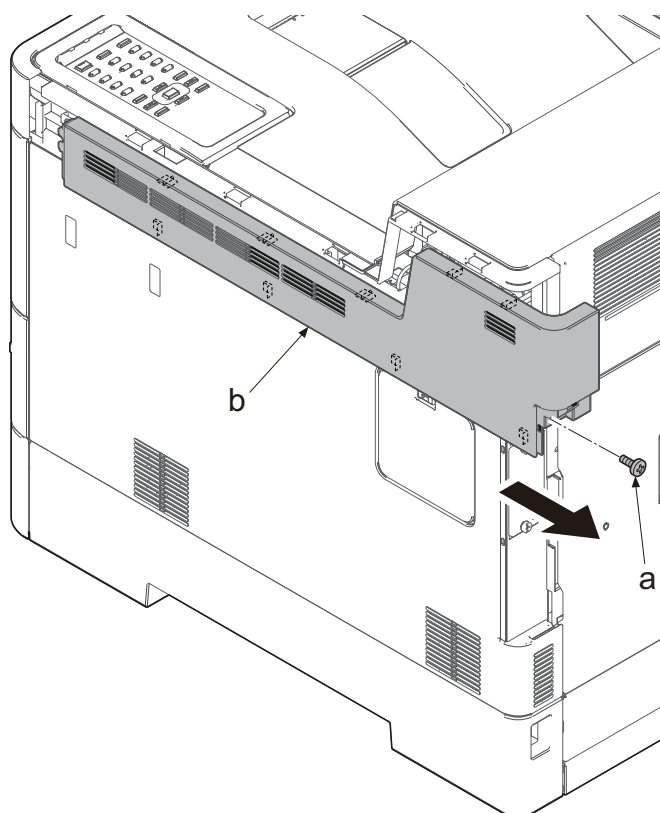
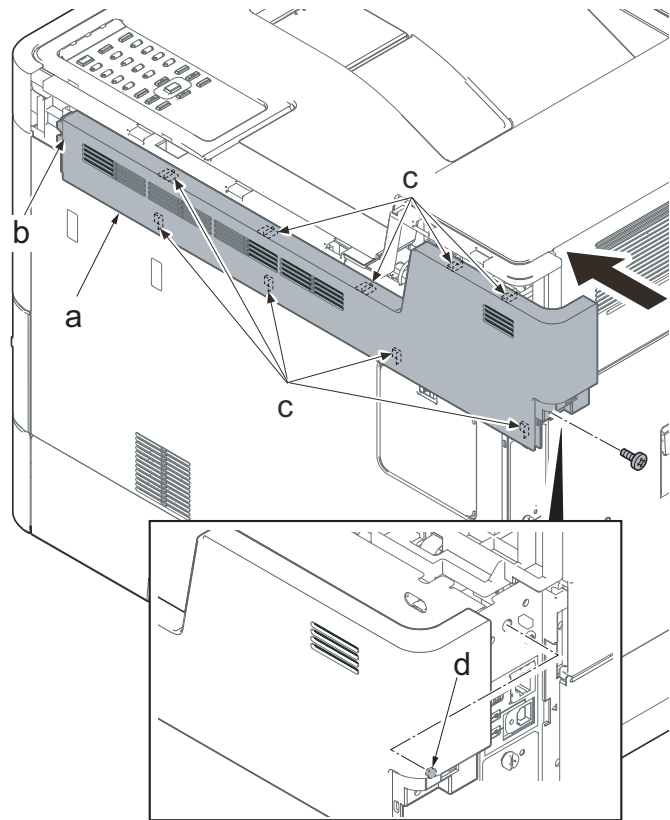


Figure 4-62

**IMPORTANT**

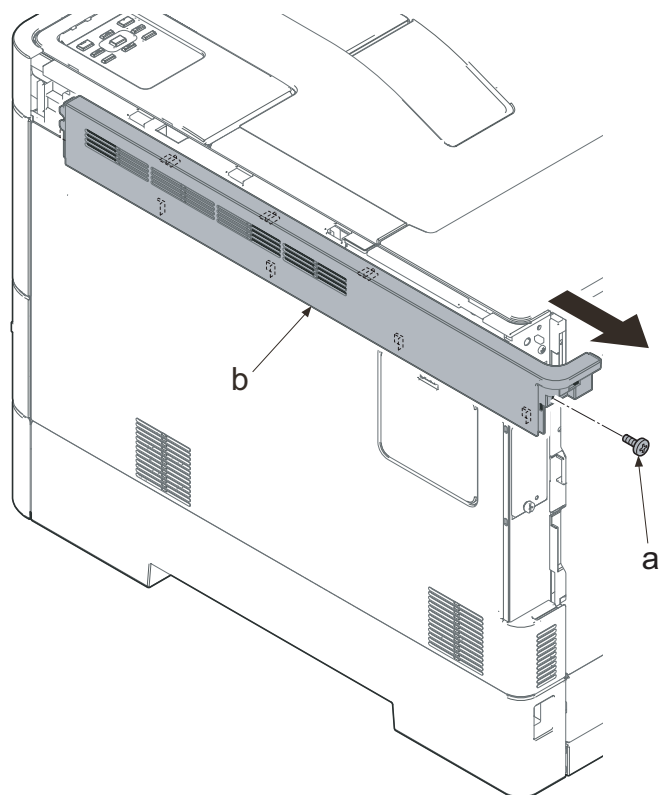
When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-63**

**30 ppm model**

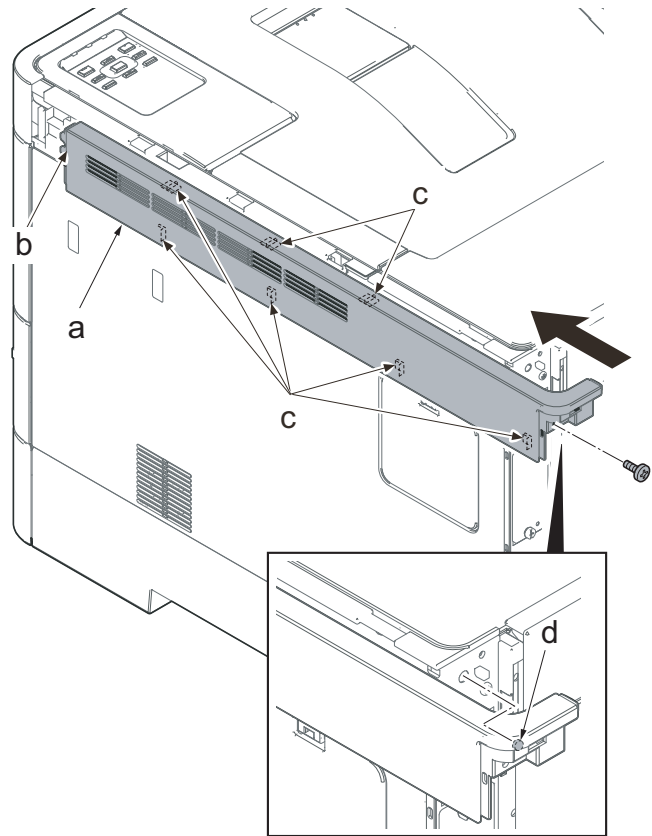
3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.



**Figure 4-64**

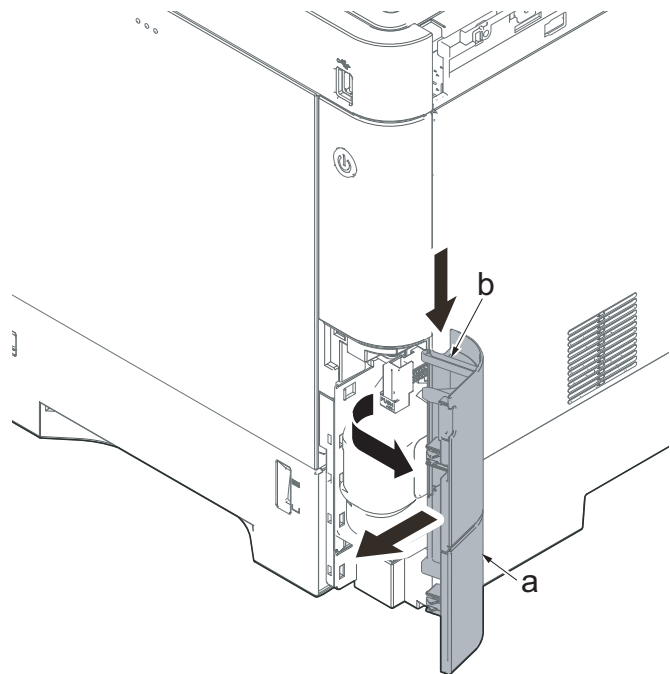
**IMPORTANT**

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten seven hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



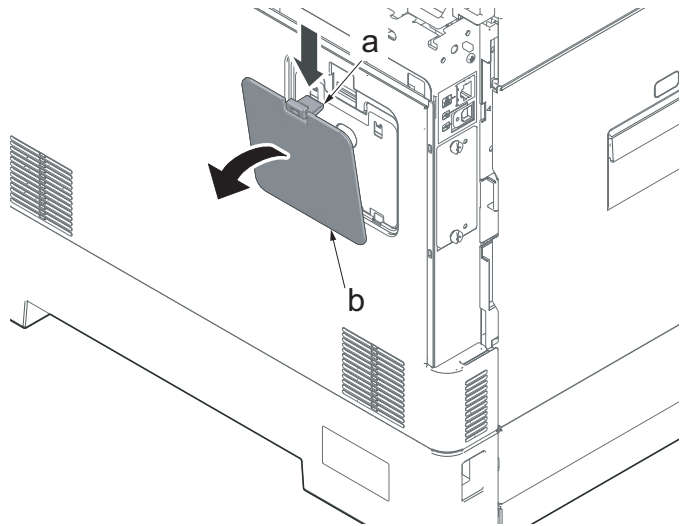
**Figure 4-65**

5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).



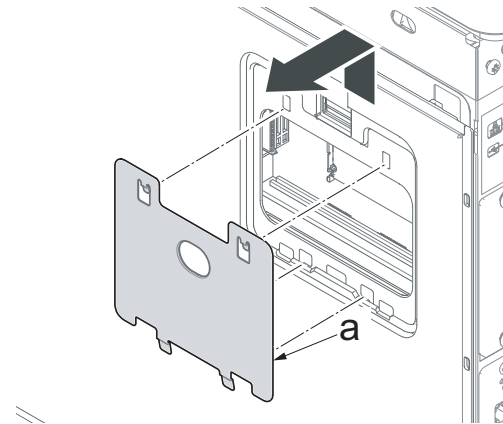
**Figure 4-66**

- 8. Push the lever (a) and open the memory cover (b).
- 9. Remove the memory cover (b).



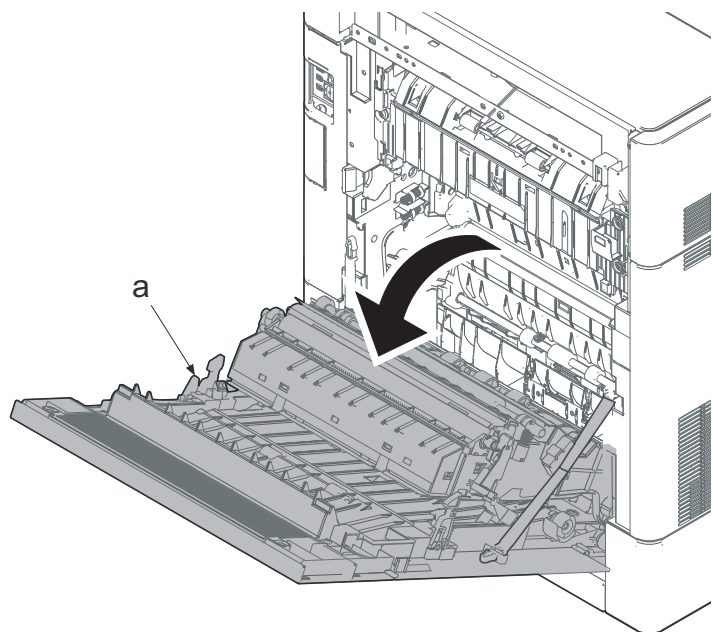
**Figure 4-67**

- 10. Pull up the shield lid (a) and pull it toward you to remove it.



**Figure 4-68**

- 11. Open the rear cover (a).



**Figure 4-69**

12. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

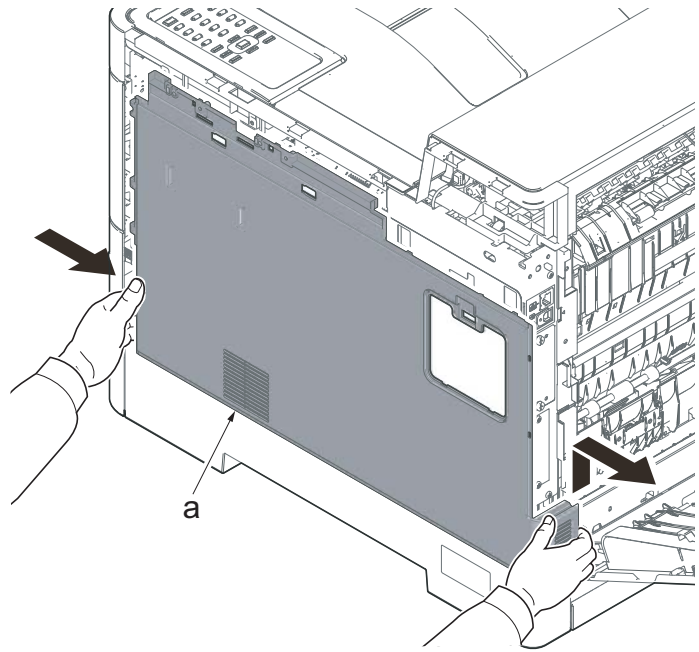


Figure 4-70

**IMPORTANT**

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side. Check if three hooks (d) at the machine rear side are surely fastened.

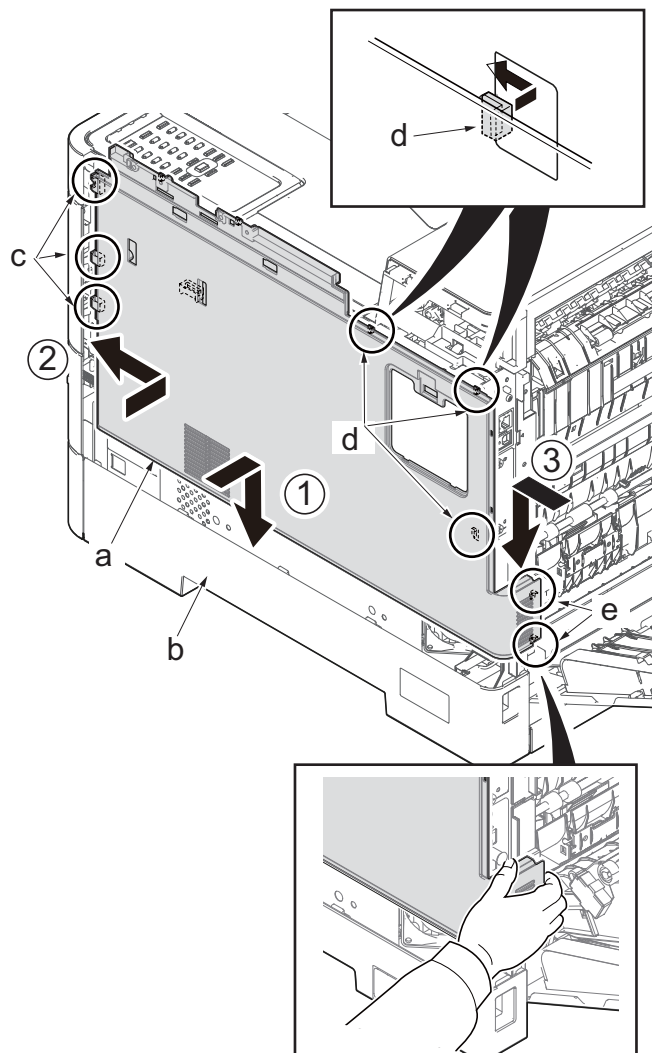


Figure 4-71

### (1-5) Detaching and reattaching the lower left cover

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

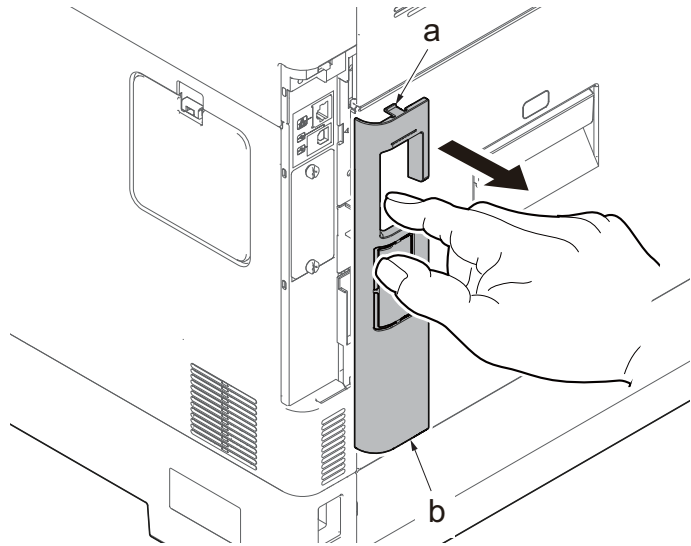


Figure 4-72

#### 35/40 ppm model

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

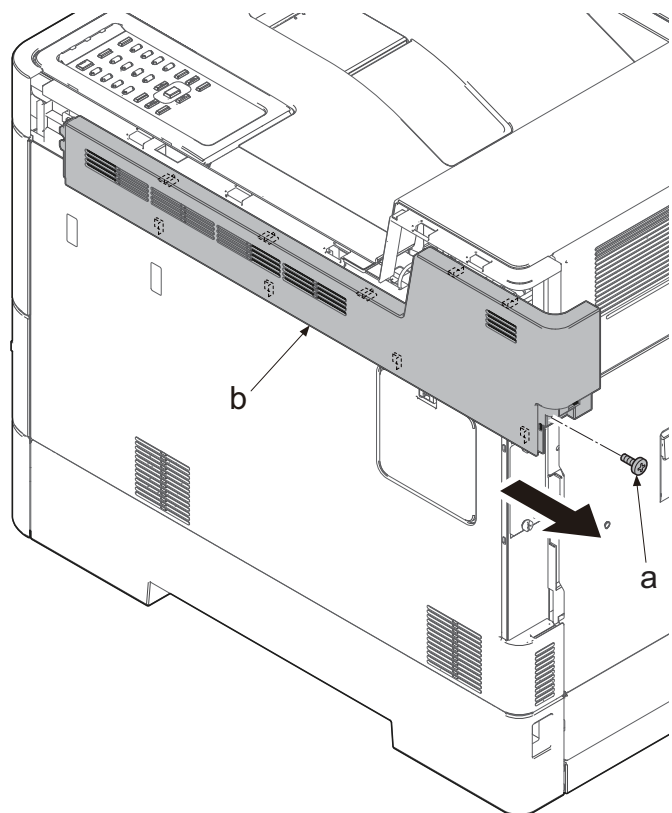
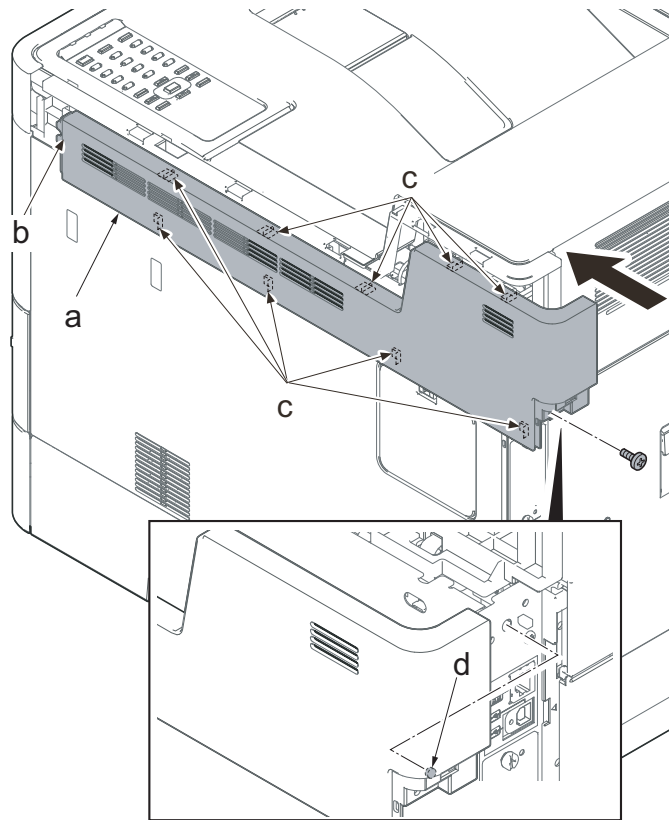


Figure 4-73



**IMPORTANT**

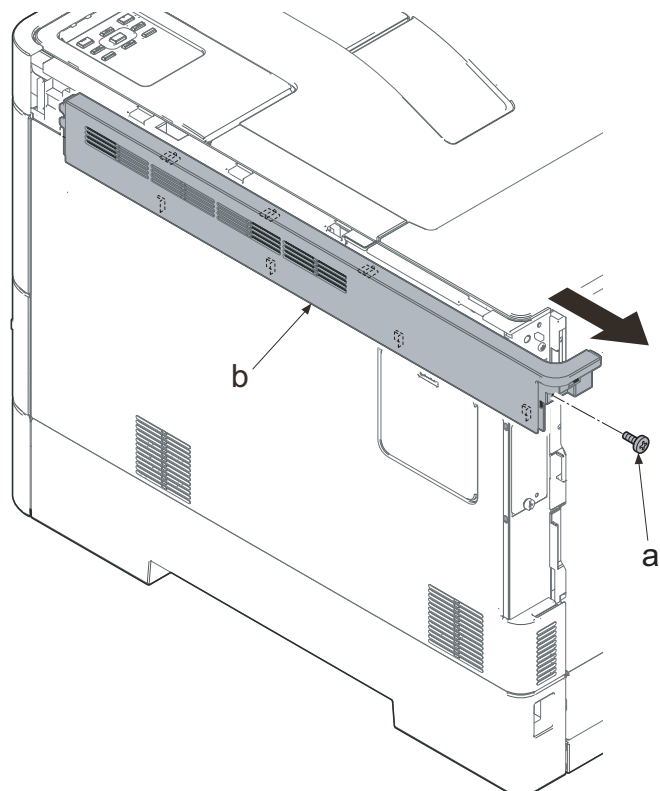
When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-74**

30 ppm model

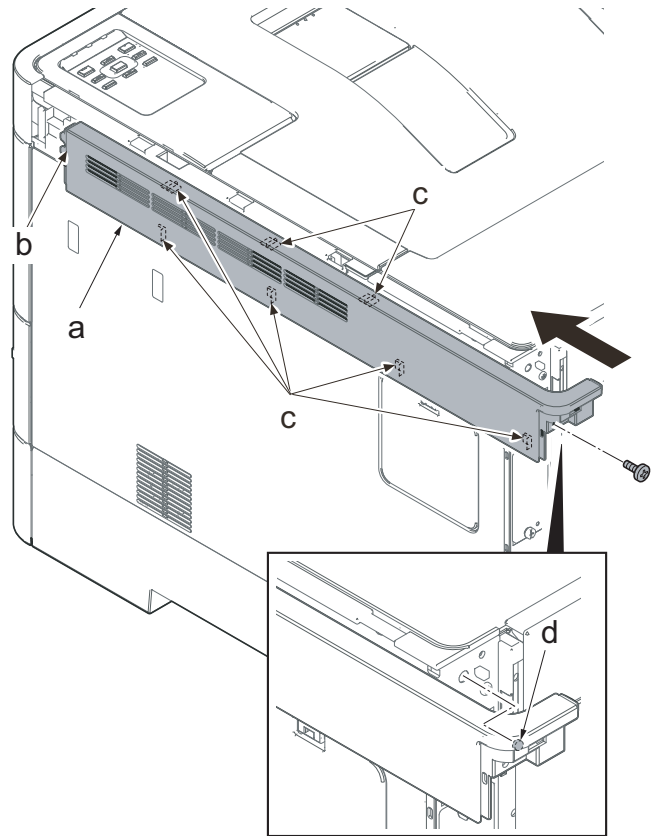
3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.



**Figure 4-75**

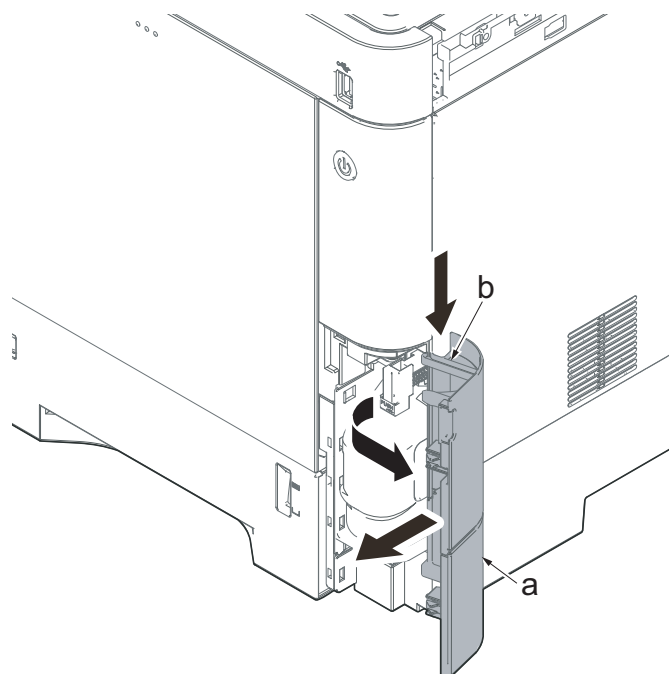
**IMPORTANT**

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten seven hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-76**

5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).



**Figure 4-77**

- 8. Push the lever (a) and open the memory cover (b).
- 9. Remove the memory cover (b).

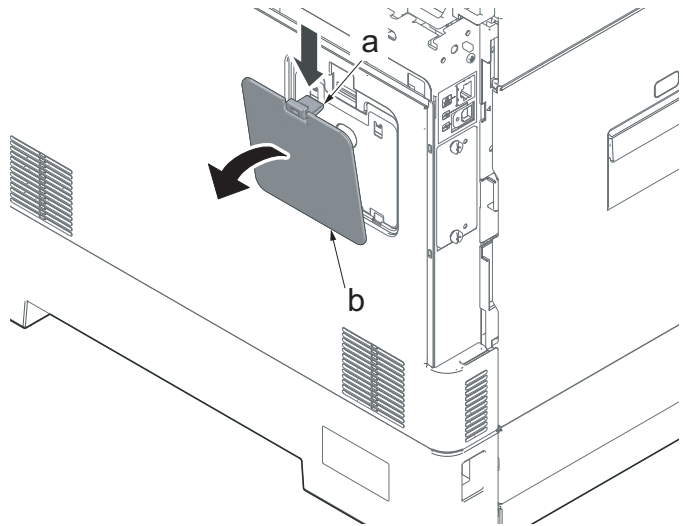


Figure 4-78

- 10. Pull up the shield lid (a) and pull it toward you to remove it.

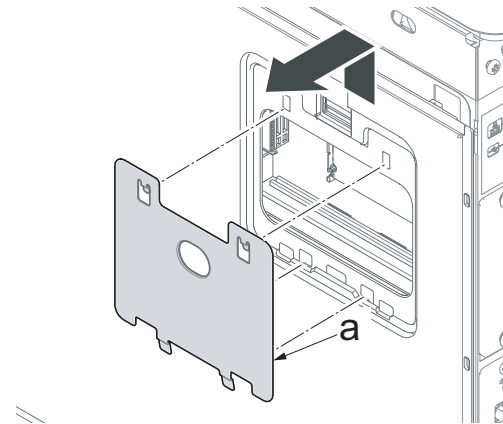


Figure 4-79

- 11. Open the rear cover (a).

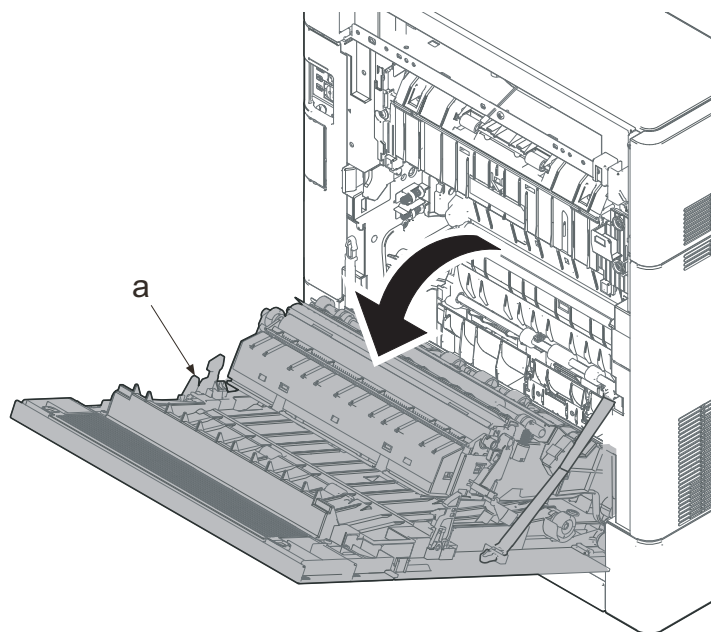


Figure 4-80

12. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

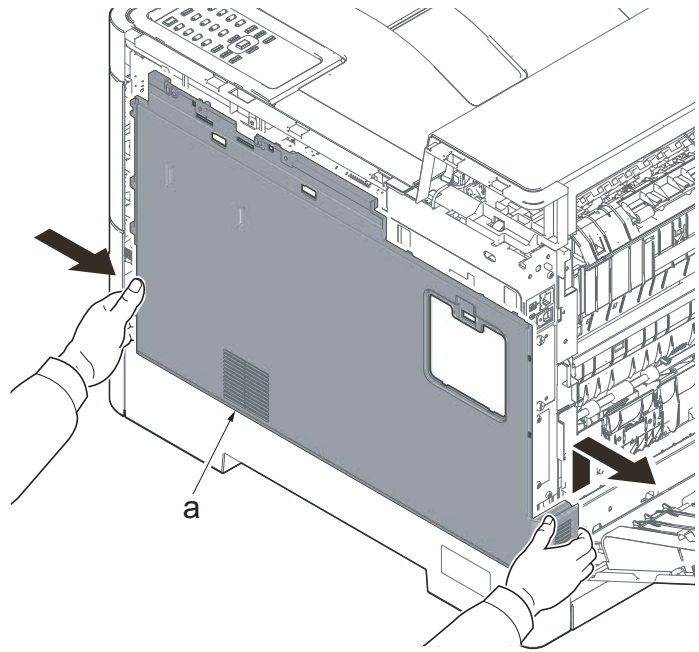


Figure 4-81

**IMPORTANT**

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side. Check if three hooks (d) at the machine rear side are surely fastened.

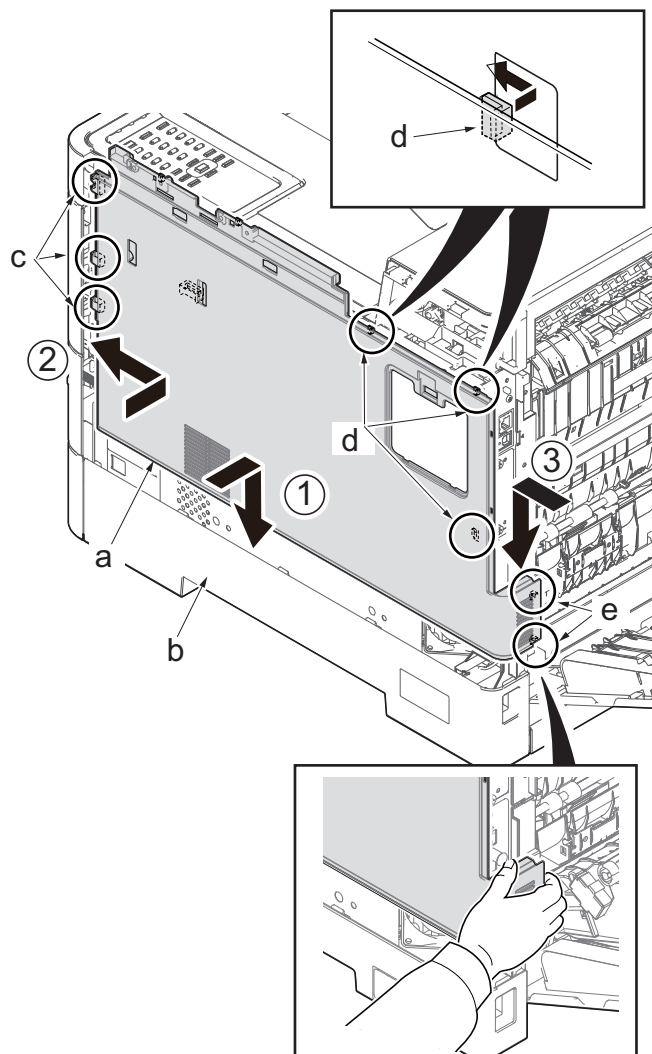


Figure 4-82

13. Remove the screw (a)(M3x8).
14. Release the hook (c) of the lower right cover (b) toward the machine right side and slide it toward the machine rear side to detach it.

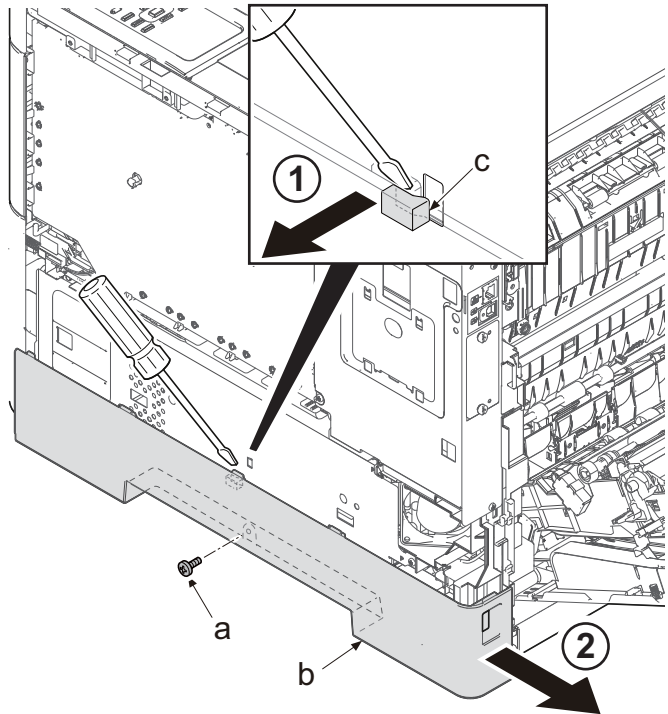


Figure 4-83

### (1-6) Detaching and reattaching the upper left cover

1. Open the rear cover (a).

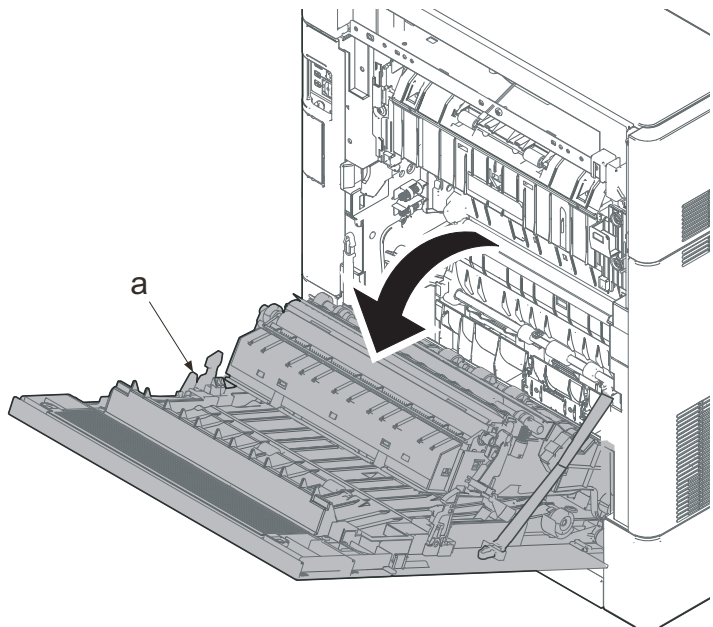


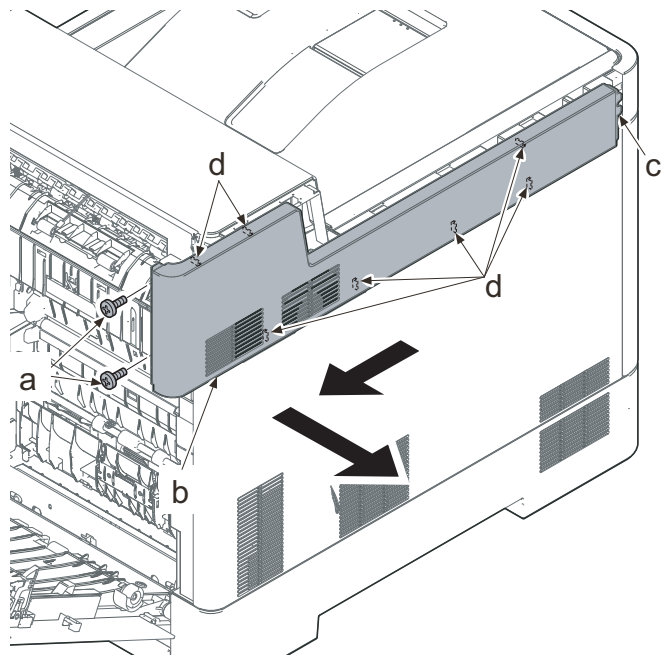
Figure 4-84

**35/40 ppm model**

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

**IMPORTANT**

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.



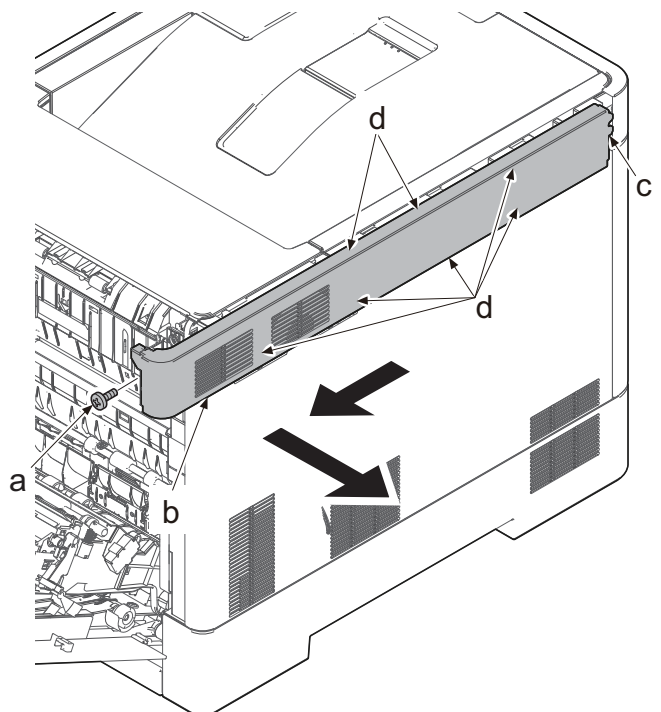
**Figure 4-85**

**30 ppm model**

2. Remove the screw (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

**IMPORTANT**

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.



**Figure 4-86**

## (1-7) Detaching and reattaching the middle left cover

1. Open the rear cover (a).

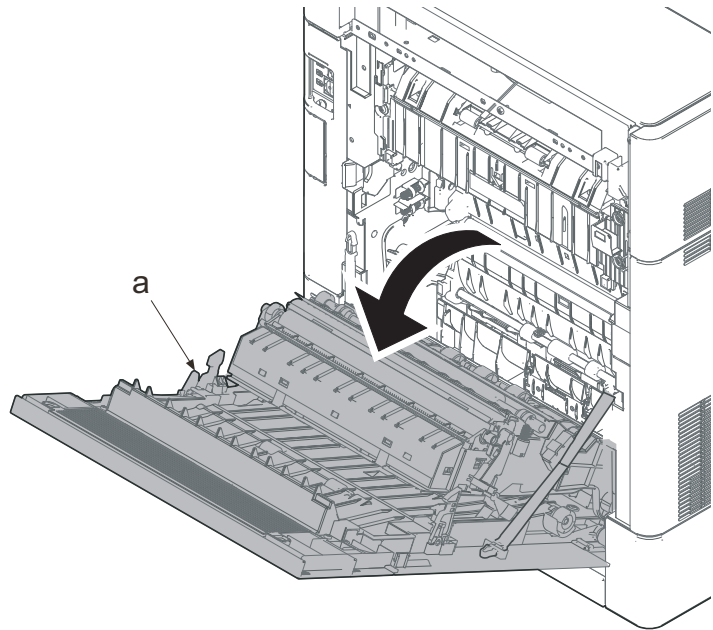


Figure 4-87

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

### IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

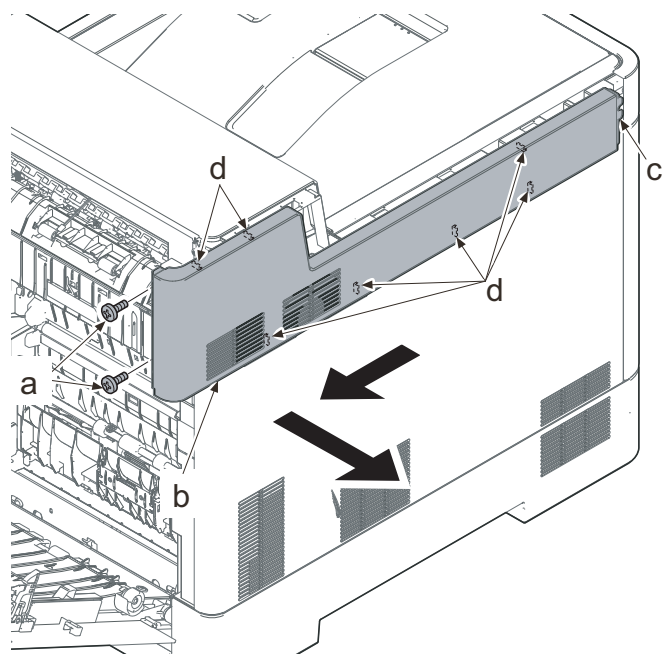


Figure 4-88



4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

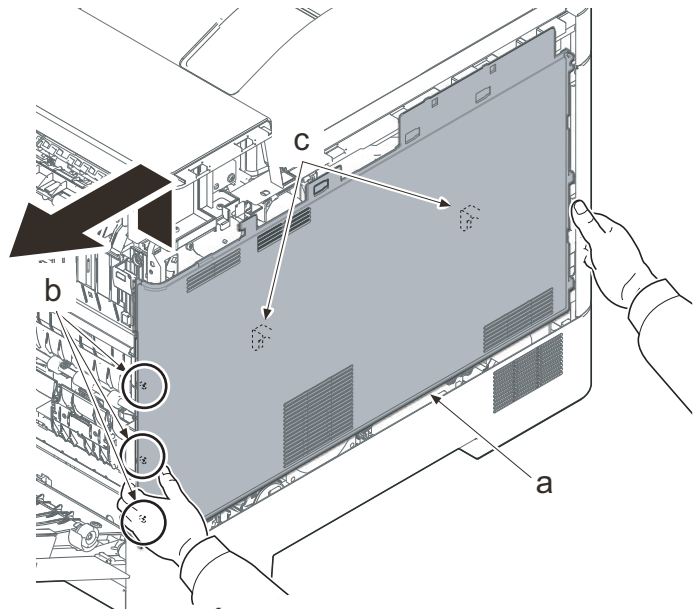


Figure 4-89

**IMPORTANT**

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). Slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

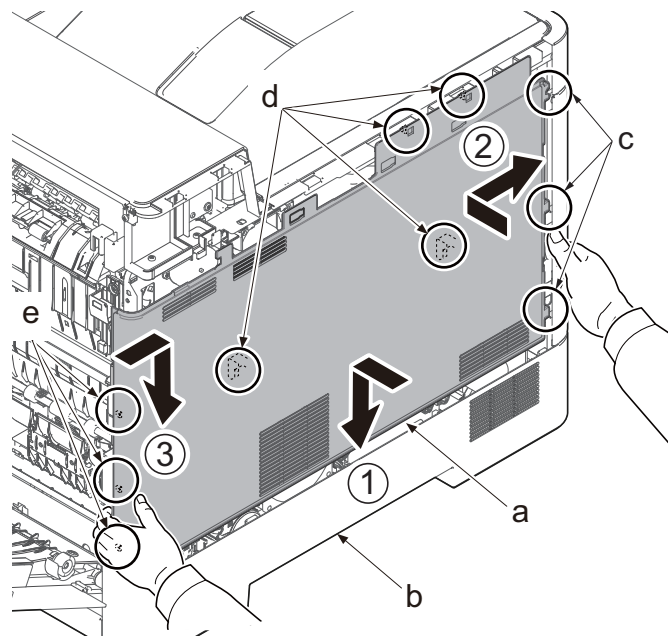


Figure 4-90



### (1-8) Detaching and reattaching the lower left cover

1. Open the rear cover (a).

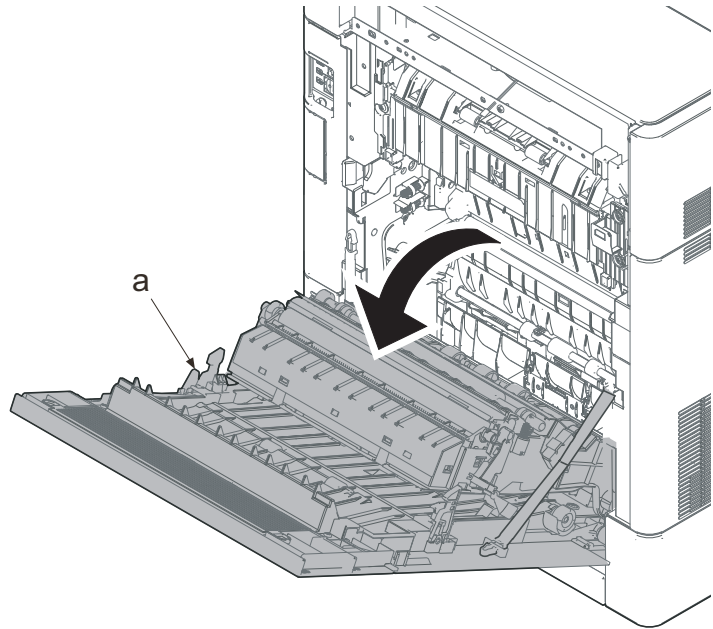


Figure 4-91

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

#### IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

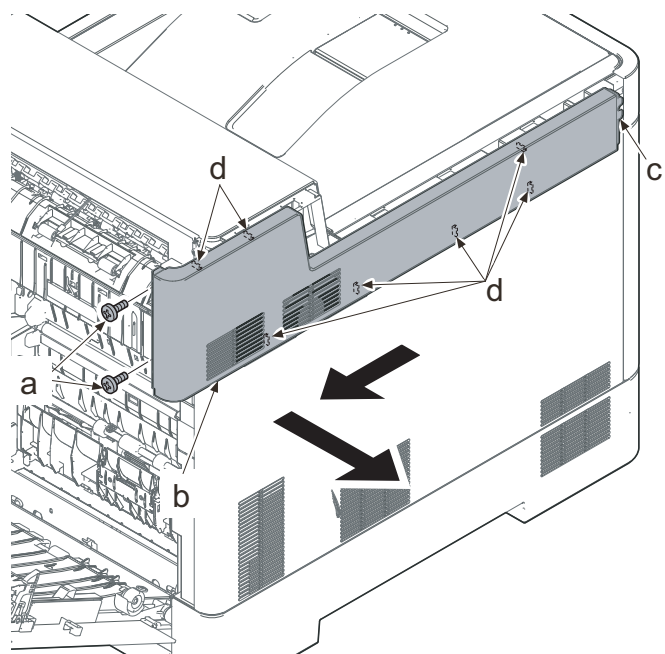


Figure 4-92

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

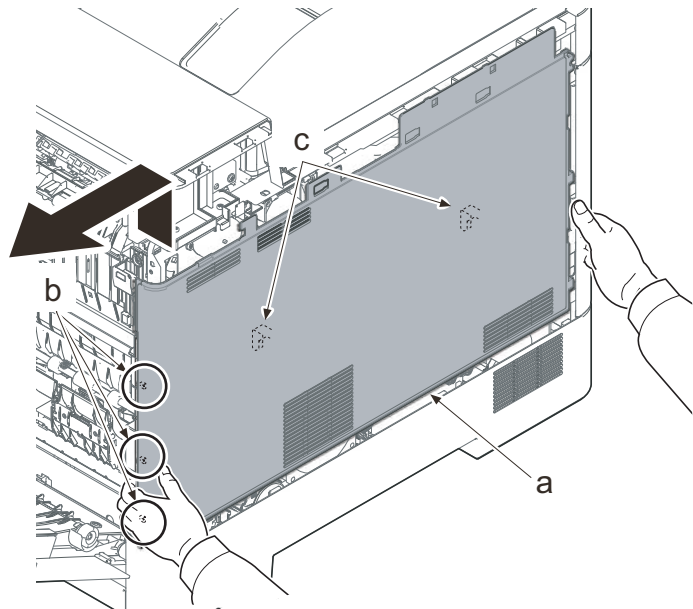


Figure 4-93

**IMPORTANT**

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). Slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

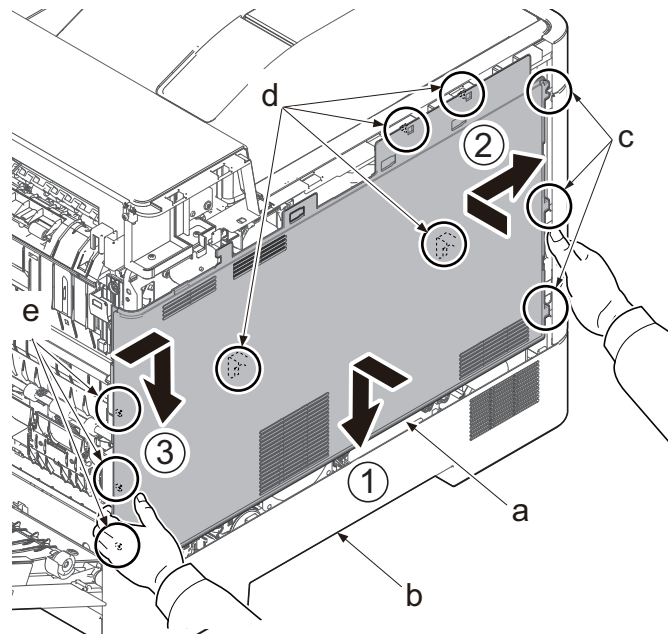


Figure 4-94

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward the machine front side and release the center hook (c).
9. Release the hook (c) using a flat-blade screwdriver.
10. Detach the lower left cover (d).

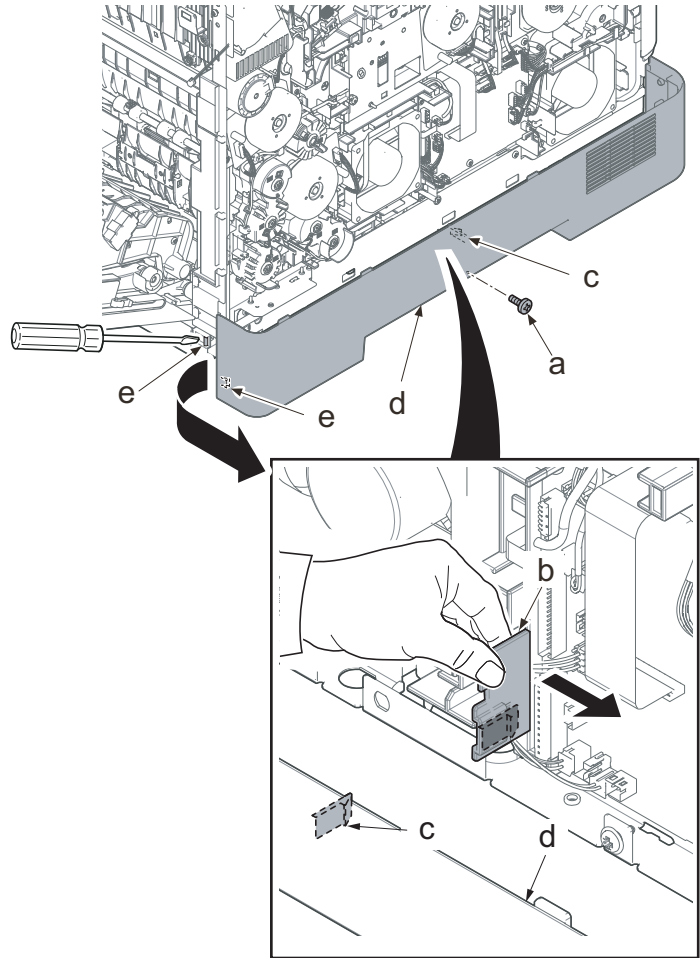


Figure 4-95

**IMPORTANT**

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, attach it with the screw.

Check if the hook at the center is surely fastened.

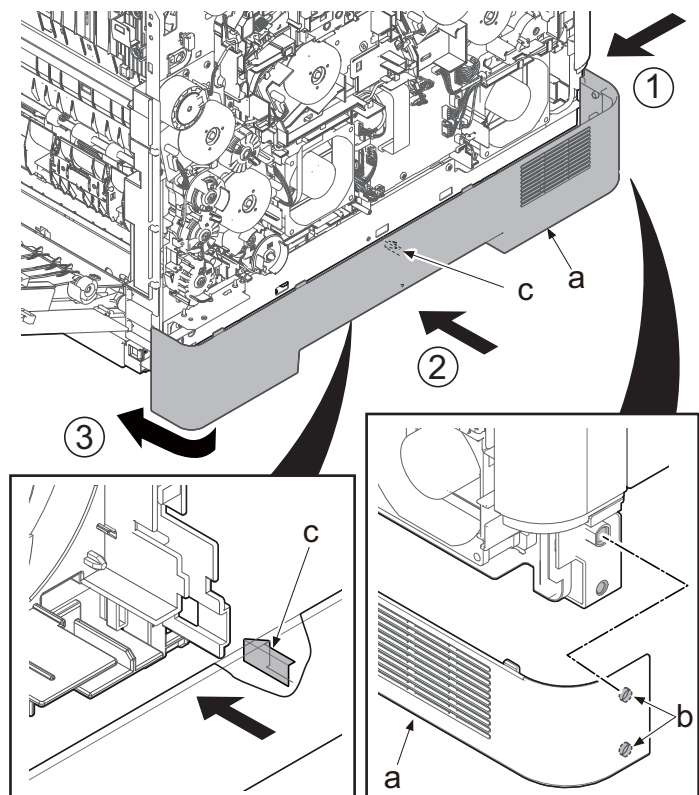


Figure 4-96

### (1-9) Detaching and reattaching the rear cover

1. Open the rear cover (a).

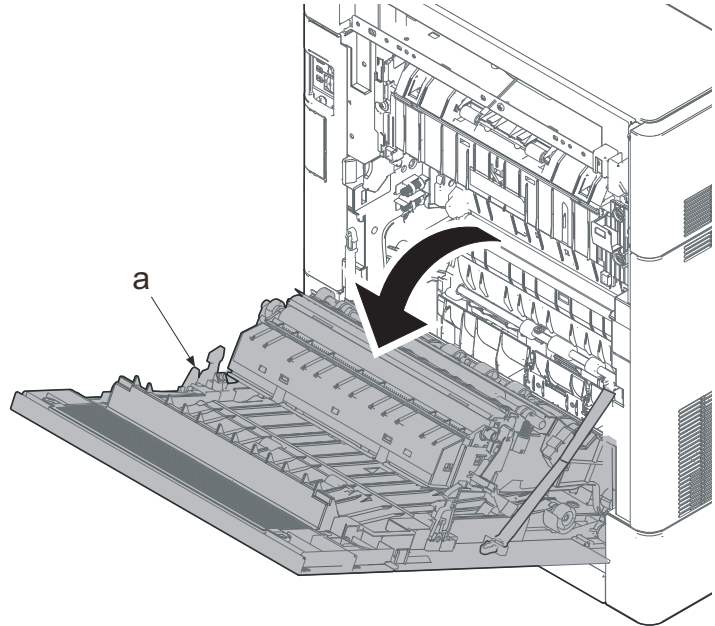


Figure 4-97

2. Close the duplex conveying unit (a).
3. Remove two straps (c) of the rear cover (b).

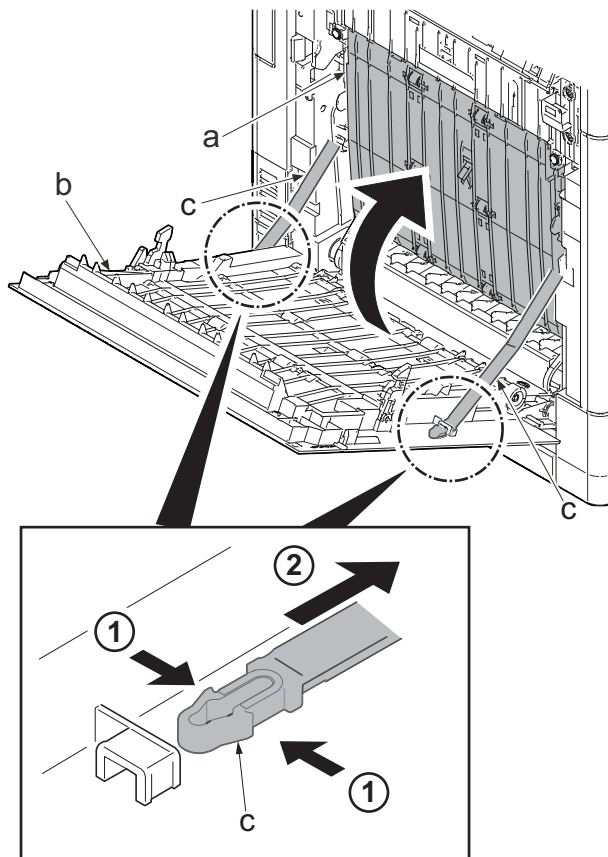


Figure 4-98

4. Align the rear cover in the direction of the arrow, then release the fulcrum parts (b) and (c), and remove the rear cover (a).

\*: To remove the fulcrum pin, first spread out the frame on the side (b).

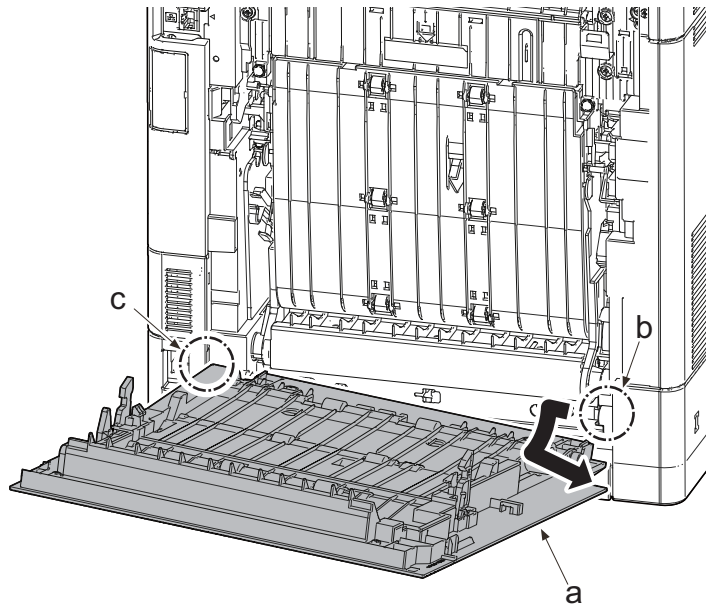


Figure 4-99

## 4-5 PWBs replacement

### IMPORTANT

Before replacing the PWBs, make sure to do the following procedure.  
Otherwise, The PWB may be damaged.

1. Unplug the power cord.
2. Turn the power switch on. Press the power switch one second or more to discharge the electric charge inside the main unit.

### (1) Detaching and reattaching the main/engine PWB

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

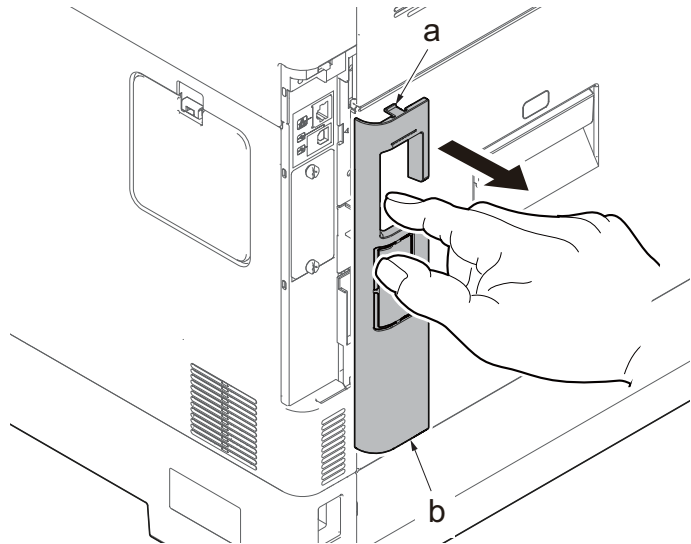


Figure 4-100

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

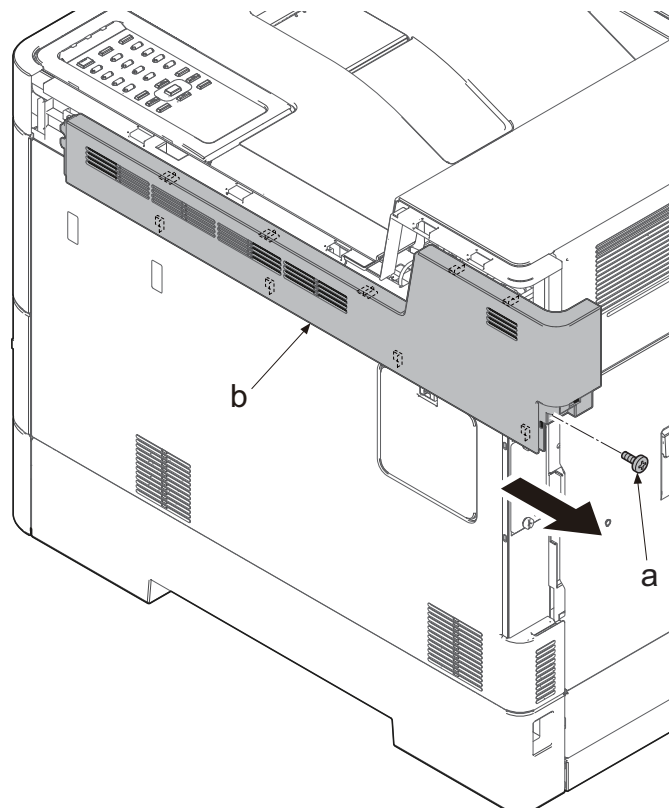
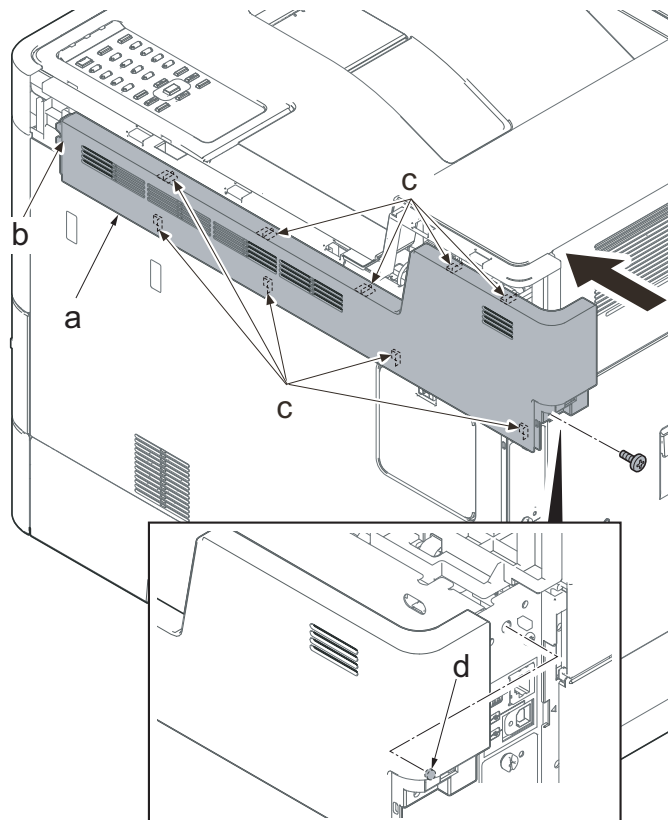


Figure 4-101

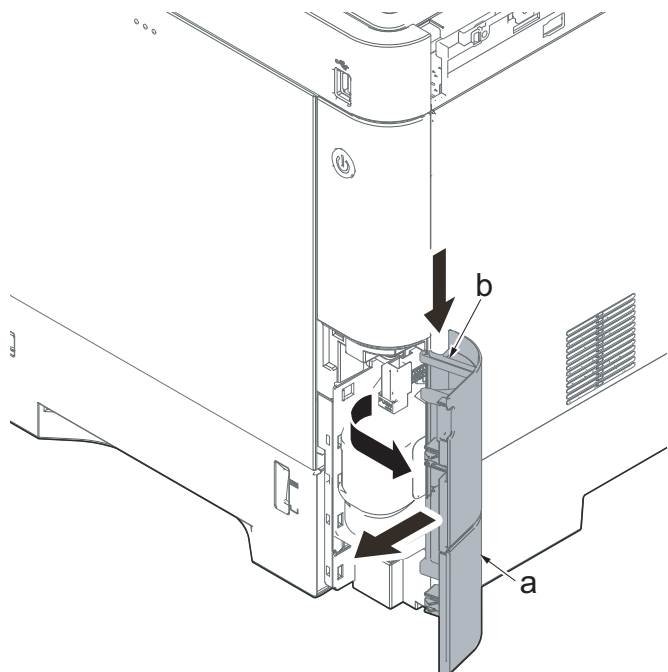
**IMPORTANT**

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-102**

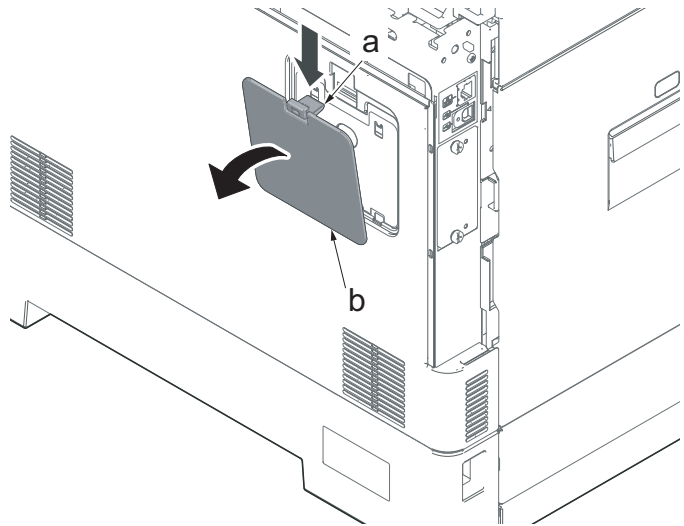
5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).



**Figure 4-103**

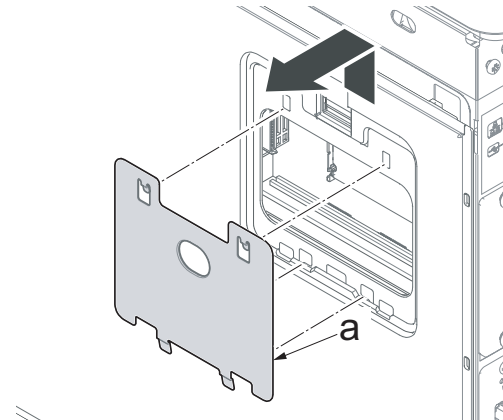


8. Push the lever (a) and open the memory cover (b).
9. Remove the memory cover (b).



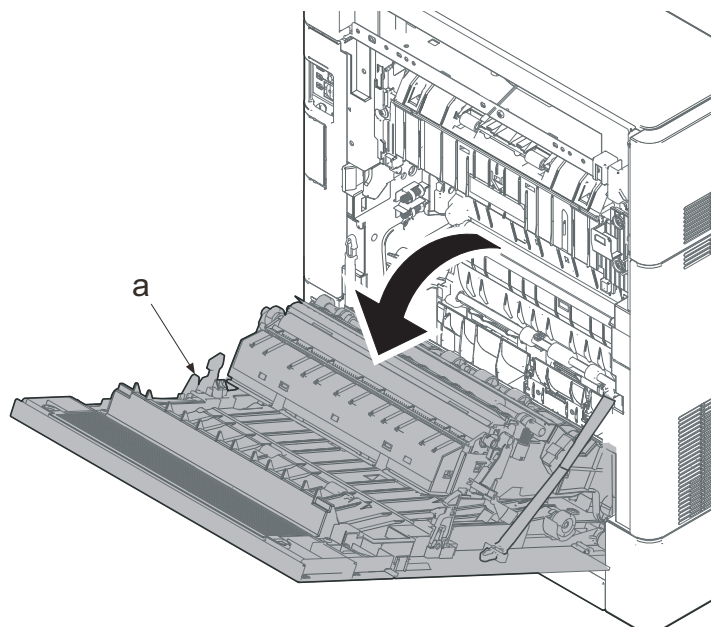
**Figure 4-104**

10. Pull up the shield lid (a) and pull it toward you to remove it.



**Figure 4-105**

11. Open the rear cover (a).



**Figure 4-106**



12. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

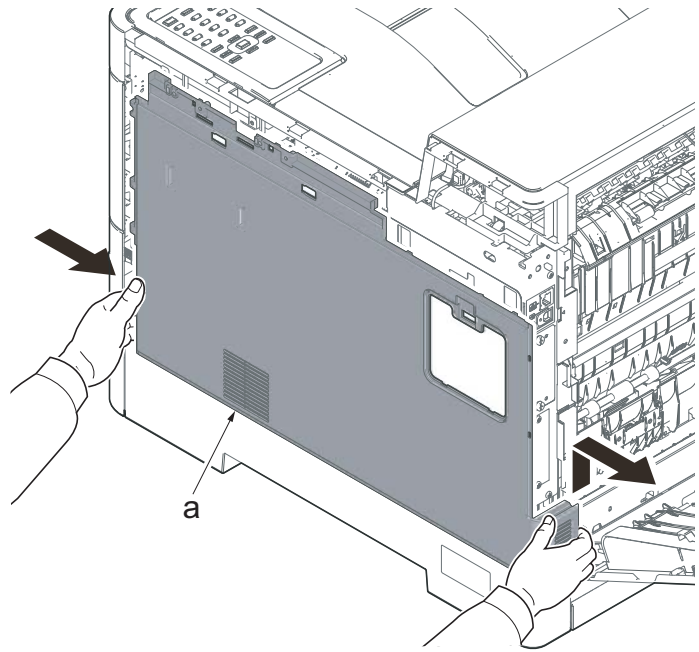


Figure 4-107

**IMPORTANT**

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side. Check if three hooks (d) at the machine rear side are surely fastened.

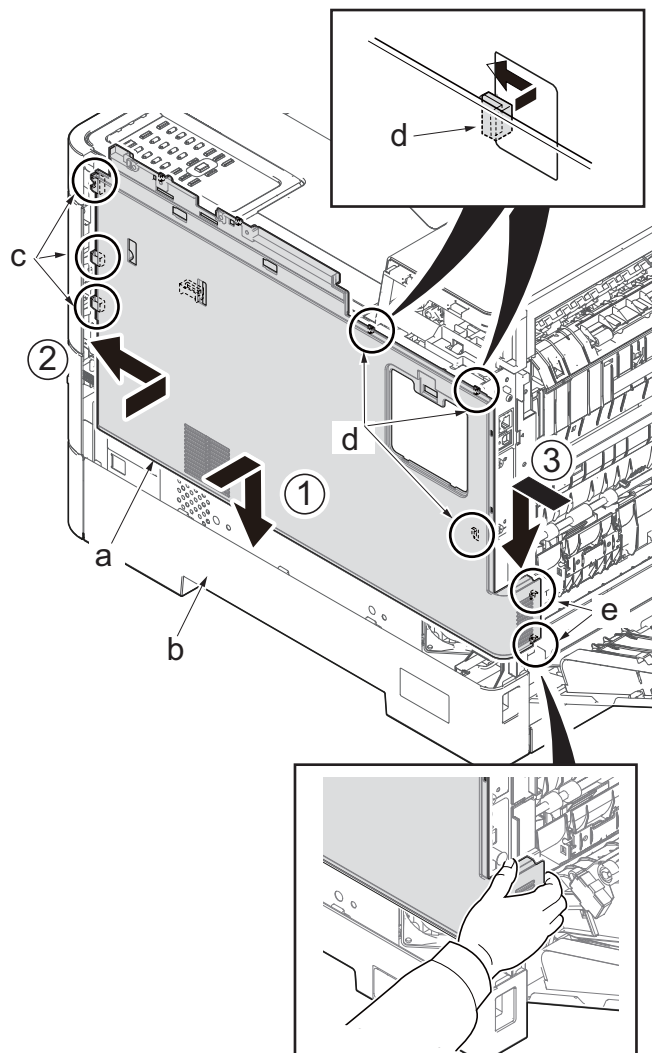


Figure 4-108

13. Remove the network connector cap (a).

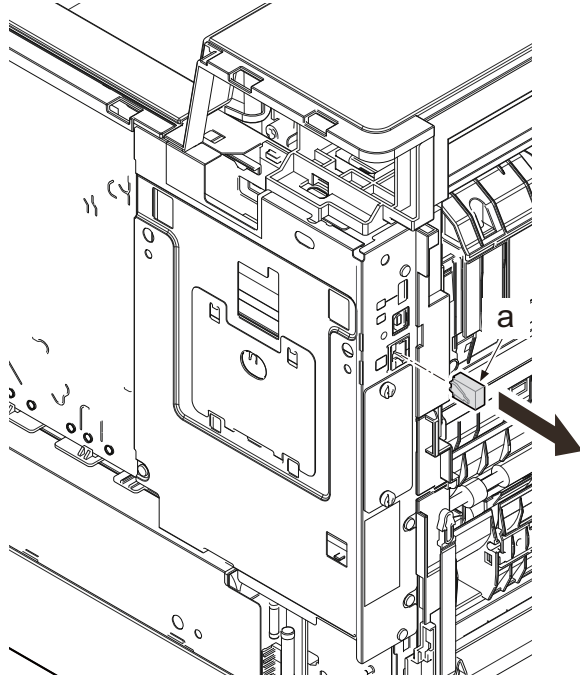


Figure 4-109

14. Remove the optional board (b), if installed.

\*: Remove two screws (a)(M3x8) and remove the optional board.

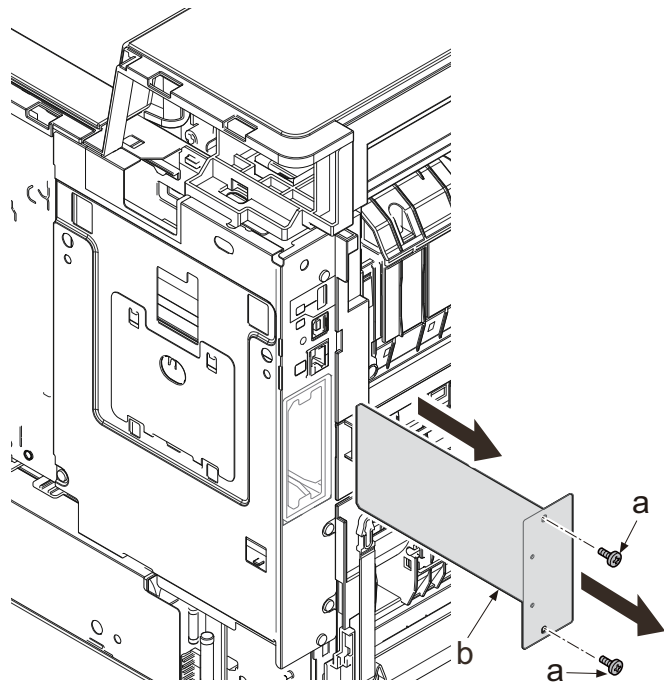


Figure 4-110

15. Remove four screws (a)(M3x8).

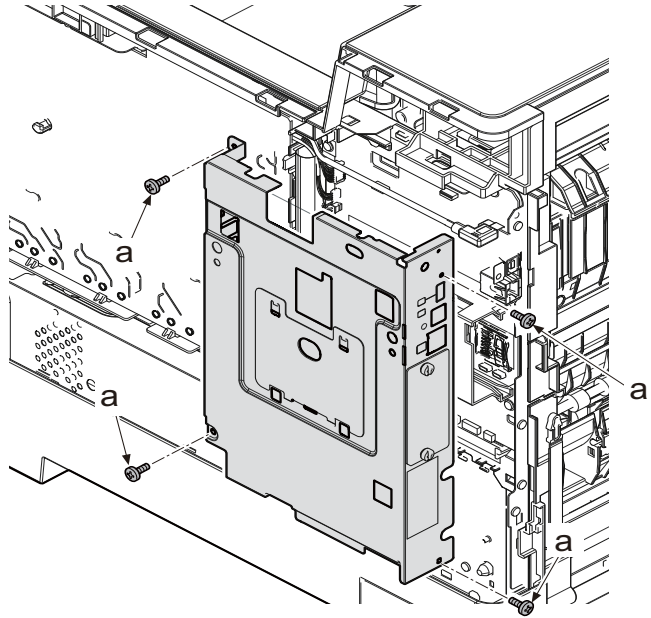


Figure 4-111

16. Remove the network connector (a) while sliding it toward the machine rear side and then remove the controller shield (b).

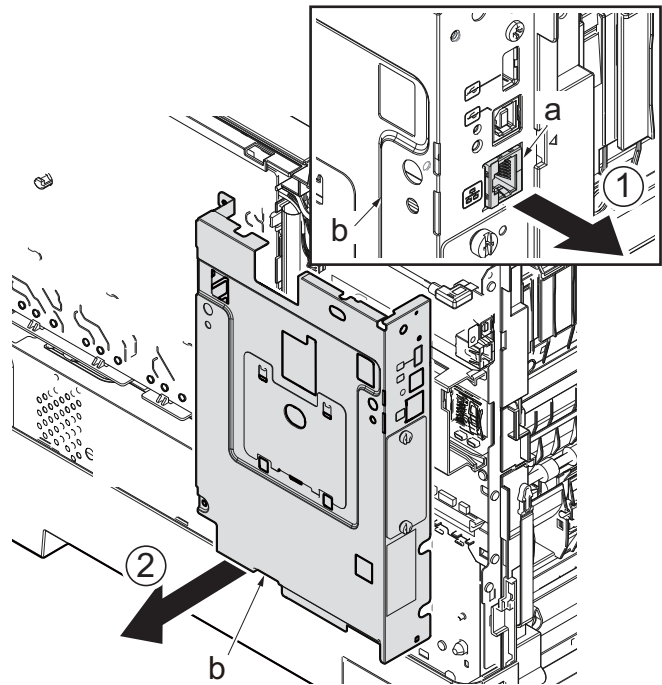


Figure 4-112

17. Open the wire alignment film (c) by releasing its square hole from the hook (b) of the upper PWB guide (a).

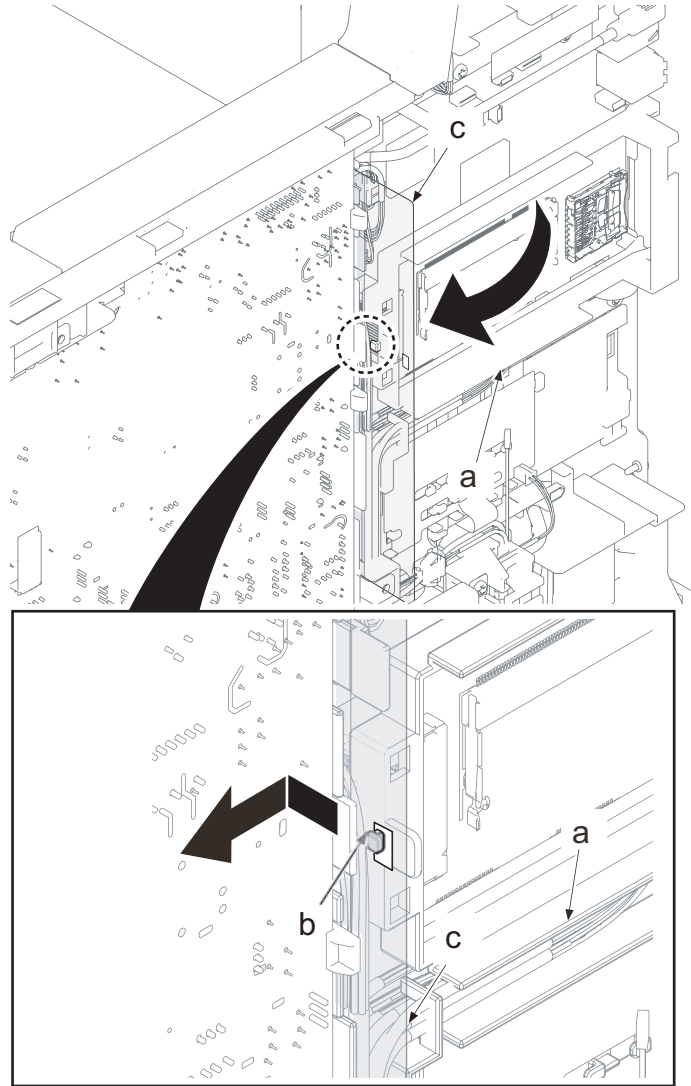


Figure 4-113

18. Release two hooks (b) of the PWB guides (a).

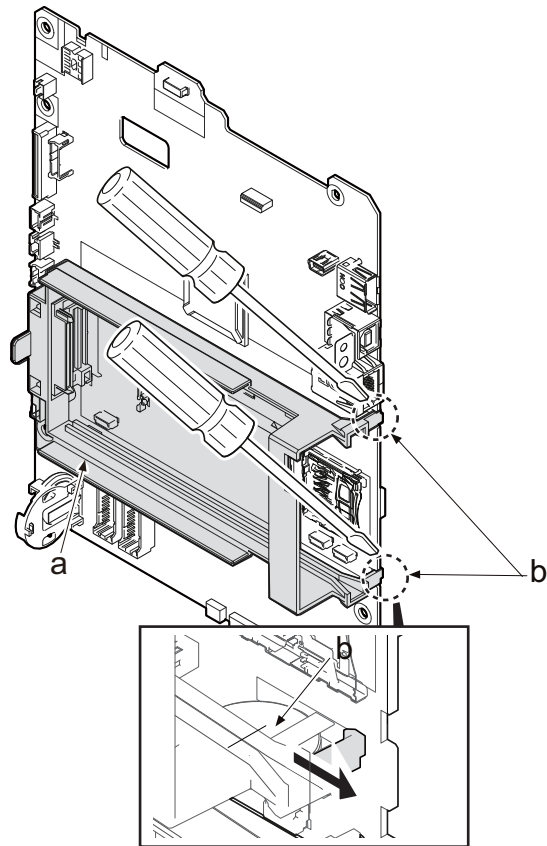


Figure 4-114

19. Slide the PWB guide (a) toward the machine rear side to release two hooks (b).

**IMPORTANT**

Check if four hooks (b) are fastened after reattaching the PWB guide (a).

The optional PWB connector can not be connected without hooking.

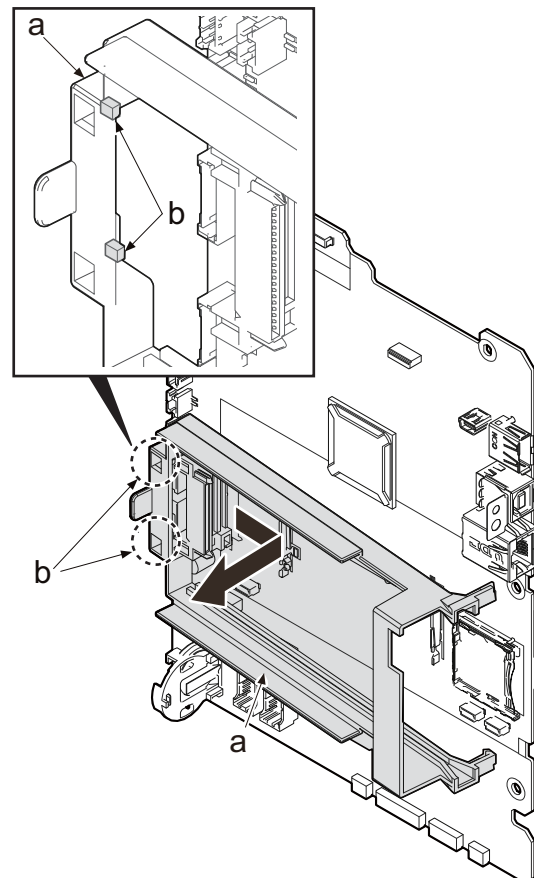


Figure 4-115

- 20. Disconnect all the connectors and the FFCs from the main/engine PWB (a).
- \*: YC10 is used only for 40 ppm model.
- 21. Release the wire from the hook (c) of the wire guide (b).

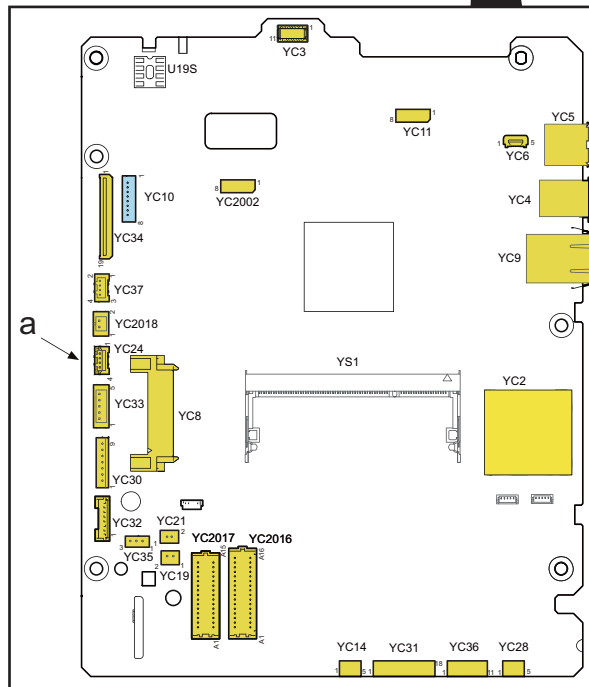
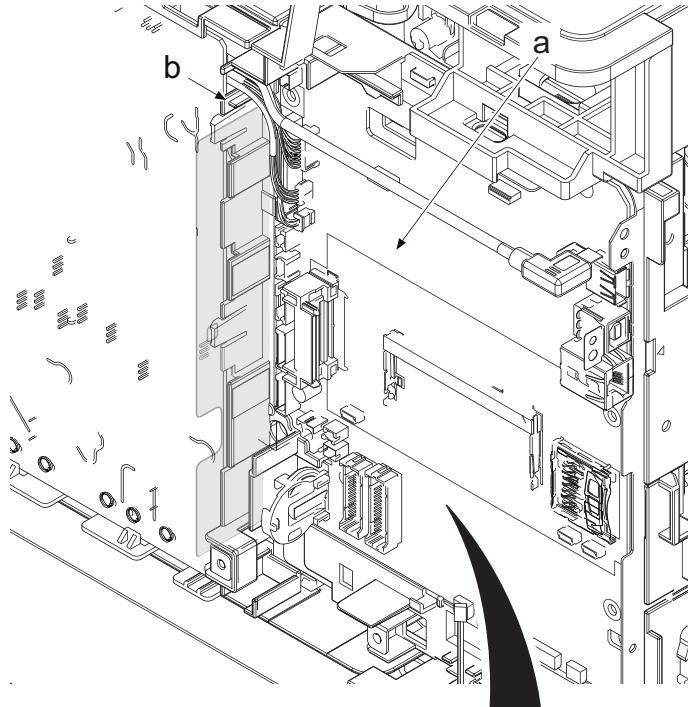


Figure 4-116

22. Remove two screws (a)(M3x8).
23. Release the hook (c) and remove the wire guide (b) from the main /engine PWB (d).

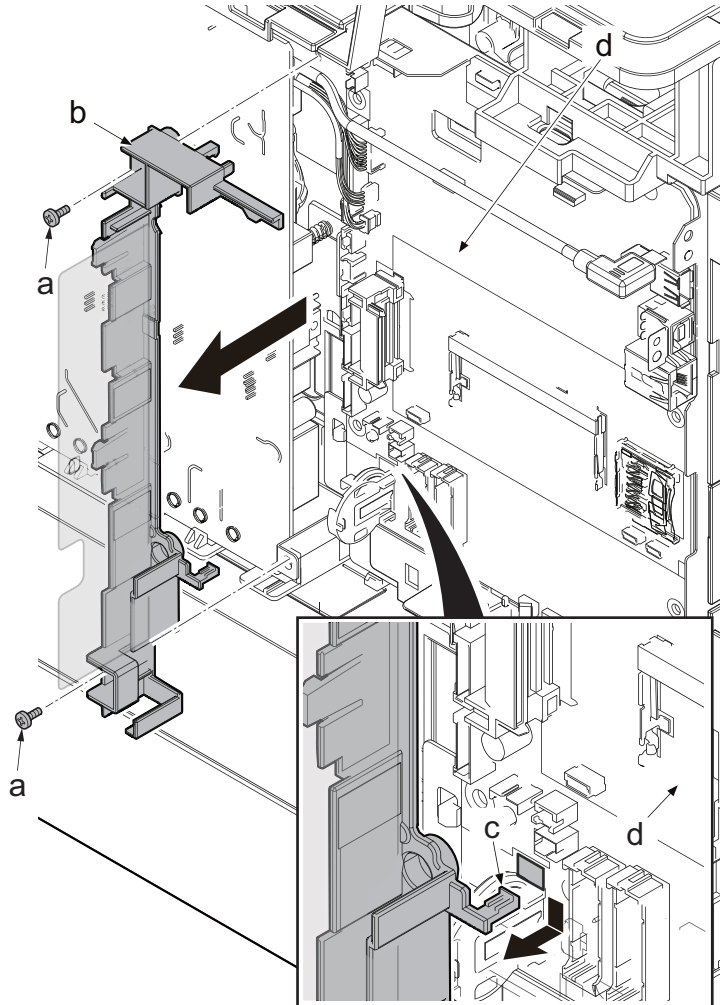


Figure 4-117

- 24. Remove six screws (a)(M3x8).
- 25. Remove the main/engine PWB (b).

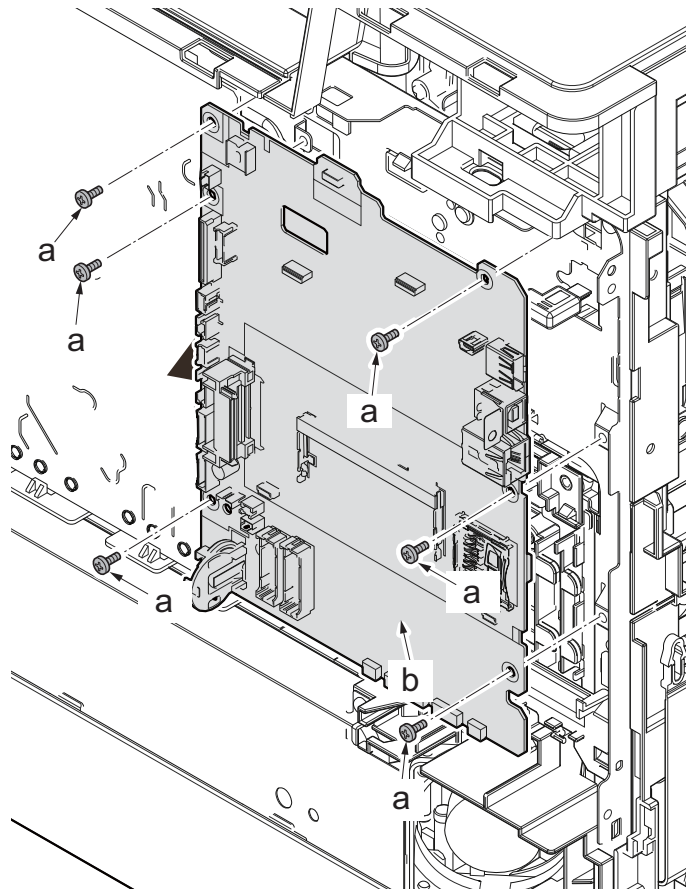


Figure 4-118

- 26. Replace the EEPROM(U19) (b) from the old PWB (a) to the new one.
- 27. Check the main/engien PWB and clean or replace it if necessary.
- \*: Replace the optional memory from the old PWB to the new one, if installed.
- 28. Reattach the parts in the original position.

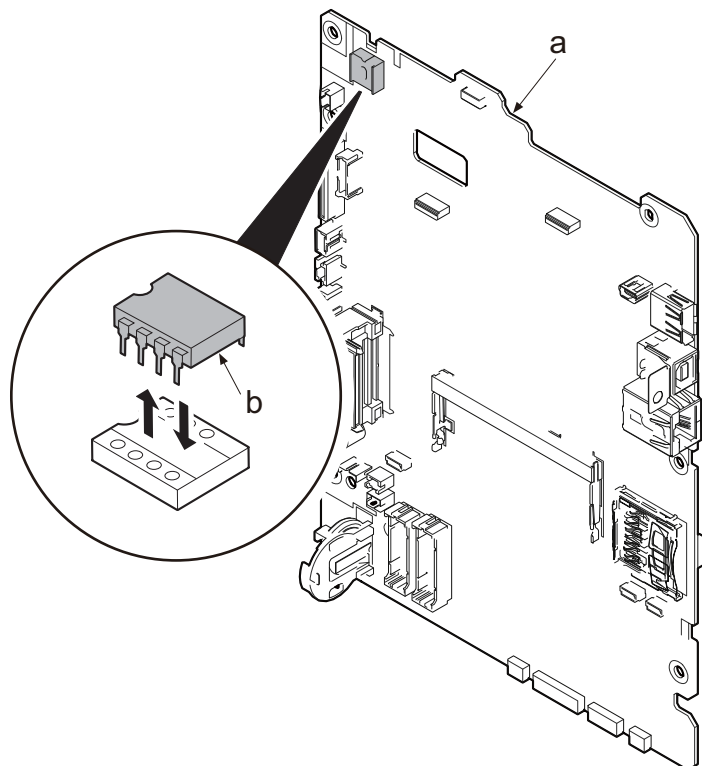


Figure 4-119

**Notes when replacing the main/engine PWB**



\*: Since the MAC address changes, check the network settings.

Example: If the printer name is registered with the IP address, reset the IP address.

\*: For 40 ppm model, if the following settings were changed from default, resetting is required.

- (1)Drum heater setting(default: OFF)
- (2)Auto Drum refreshing(default: Standard)

**Execute the following after replacing the main/engine PWB.**

- 1. Upgrade the main and the engine firmware to the latest version, and install the option language and color table (1,2). (See page P.5-1)
- 2. Execute the Color Calibration

**30 ppm model**

- (1)Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key

- (2)Adjust

[▲][▼] key > [Color Calibration] > [OK] key > [OK] key

[Color Calibration] is executed and [Adjustment/Maintenance] is displayed when completing it.

**35/40 ppm model**

- (1) Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [OK] key > [▲][▼] key > [Color Calibration] > [OK] key

- (2) Adjust

Select [Yes] to execute the color calibration.

[Color Calibration] is executed and [Adjustment/Maintenance] is displayed when completing it.

- 3. Execute the Color Registration

**Normal correction**

**30 ppm model**

- (1)Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key > [▲][▼] key > [Color Registration(Normal)] > [▶] key

- (2)Print chart

[▲][▼] key > [Print chart] > [OK] key > [OK] key

The charts are printed. The chart indicating H-L (left), V (center) and H-R (right) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

**35/40 ppm model**

- (1)Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [OK] key > [▲][▼] key > [Color Registration] > [OK] key > [▲][▼] key > [Normal] > [OK] key

- (2)Print chart

[▲][▼] key > [Print chart] > [OK] key > [Yes]

The charts are printed. The chart indicating H-L (left), V (center) and H-R (right) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

After printing, the color registration correction (Normal) is displayed.

Chart sample (normal)

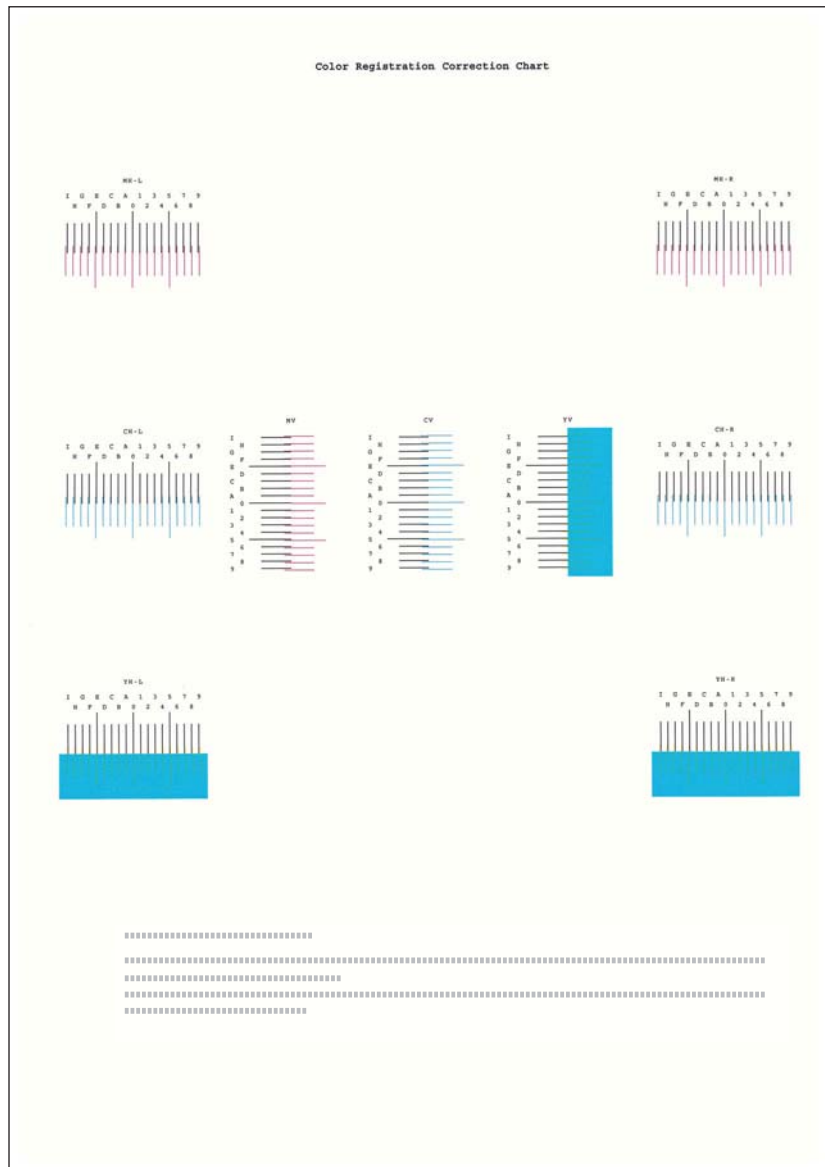


Figure 4-120

30 ppm model

(3) Indicate the correction menu.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key > [▲][▼] key > [Color Registration(Normal)] > [▶] key [▲][▼] key > [Magenta] > [OK] key  
The correction menu for Magenta is displayed.

(4) Input values.

1. Find the positions where two lines are best matched on each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

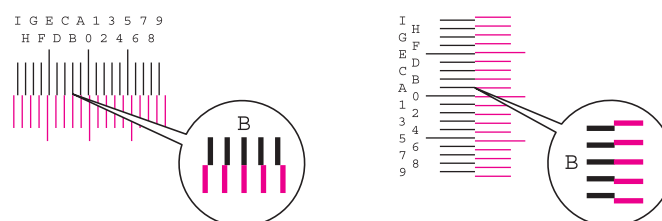


Figure 4-121

2. Select [◀] or [▶] key to change the values of H, L and V. Select [▲] or [▼] key to input the values read from the chart and press [OK] key.  
Select [▲] key to shift the value 0 to 9. Select [▼] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.
3. Select the [OK] key.  
The correction for Magenta will be completed.
4. Repeat step 3 and 4 to adjust Cyan and Yellow.

### 35/40 ppm model

(3) Indicate the correction menu.

[▲][▼] key > [Magenta] > [OK] key

The correction menu for Magenta is displayed.

(4) Input values.

1. Find the positions where two lines are best matched on each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.

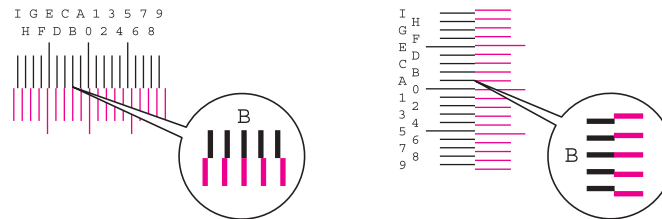


Figure 4-122

2. Select [◀] or [▶] key to change the values of H, L and V. Select [▲] or [▼] key to input the values read from the chart and press [OK] key.  
Select [▲] key to shift the value 0 to 9. Select [▼] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.  
Numeric keys input is not available.
3. Repeat step 3 and 4 to adjust Cyan and Yellow.

### Detailed settings

#### 30 ppm model

(1) Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key > [▲][▼] key > [Color Registration(Detail)] > [▶] key

(2) Print chart

[▲][▼] key > [Print chart] > [OK] key > [OK] key

The charts are printed. The chart indicating H1 to H5 (upper) and V1 to V5 (lower) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

#### 35/40 ppm model

(1) Display the screen.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [OK] key > [▲][▼] key > [Color Registration] > [OK] key > [▲][▼] key > [Detail] > [OK] key

(2) Print chart

[▲][▼] key > [Print chart] > [OK] key > [Yes]

The charts are printed. The chart indicating H1 to H5 (upper) and V1 to V5 (lower) per each color M (Magenta), C (Cyan) and Y (Yellow) is printed.

After printing, the color registration correction (Detail) is displayed.

Chart sample (detail)

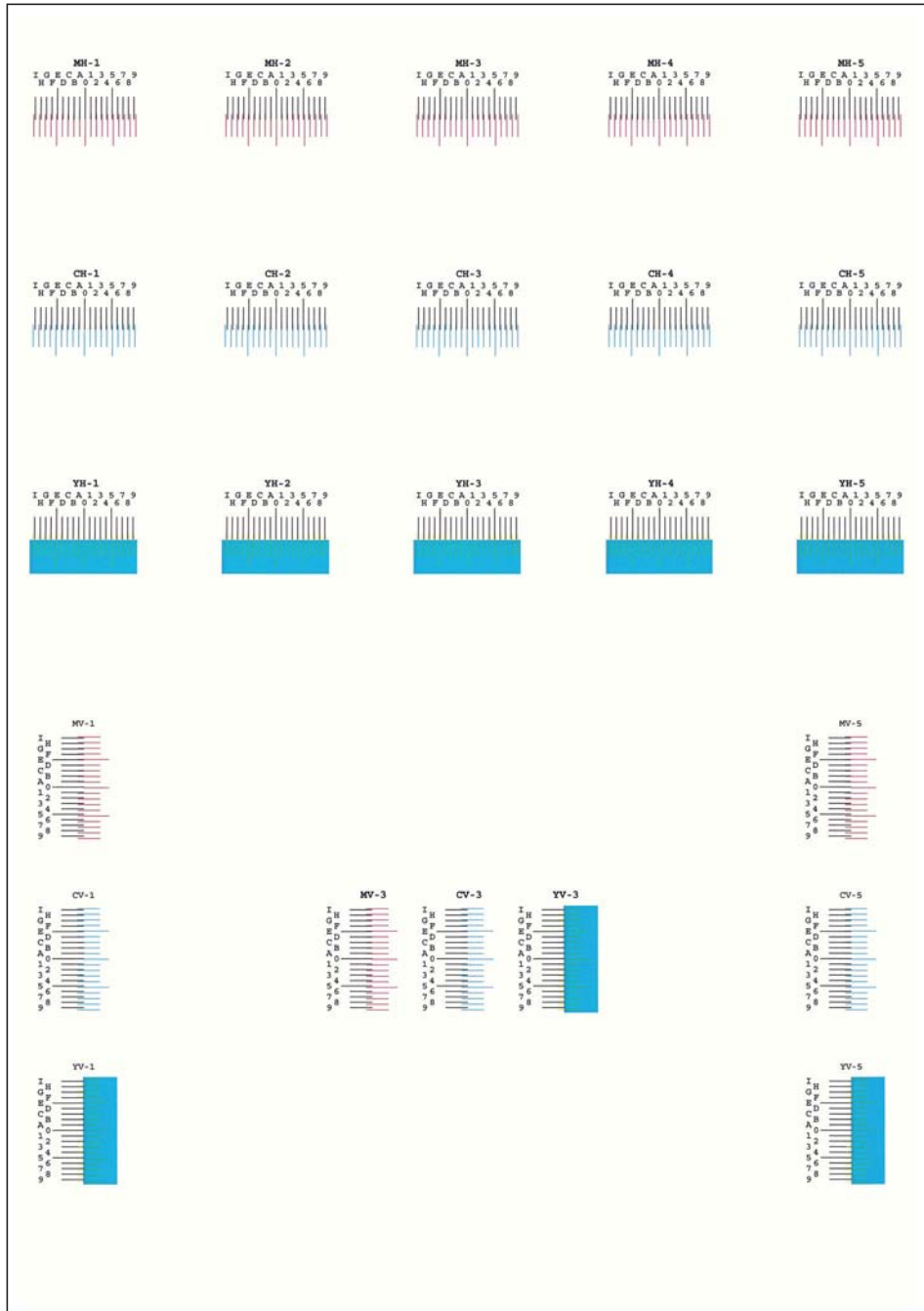


Figure 4-123

**30 ppm model**

(3) Indicate the correction menu.

[Menu] key > [▲][▼] key > [Adjustment/Maintenance] > [▶] key > [▲][▼] key > [Color Registration(Detail)] > [▶] key [▲][▼] key > [Magenta] > [OK] key  
The correction menu for Magenta is displayed.

(4) Input values.

1. Find the positions where two lines are best matched on each chart. If it is at "0", the correction is unnecessary. In case of the illustration below, "B" is the value that should be set.  
Read the values from H1 to H5 in the chart.  
Read the value of V-3 (center) only of V1 to V5 in the chart.

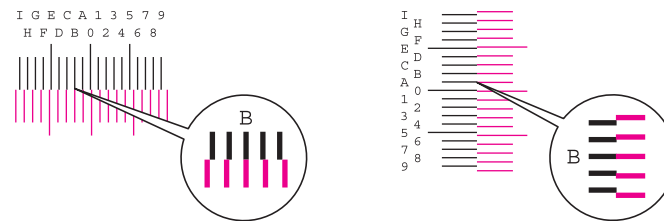


Figure 4-124

2. Select [◀] or [▶] key to change the values of H and V. Select [▲] or [▼] key to input the values read from the chart and press [OK] key.  
Select [▲] key to shift the value 0 to 9. Select [▼] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.
3. Select the [OK] key.  
The correction for Magenta will be completed.
4. Repeat step 3 and 4 to adjust Cyan and Yellow.

### 35/40 ppm model

(3) Indicate the correction menu.

[▲][▼] key > [Magenta] > [OK] key

(4) Input values.

1. Find the positions where two lines are best matched on each chart. If it is at "0", the correction is unnecessary. In case of the illustration, "B" is the value that should be set.  
Read the values from H1 to H5 in the chart.  
Read the value of V-3 (center) only of V1 to V5 in the chart.

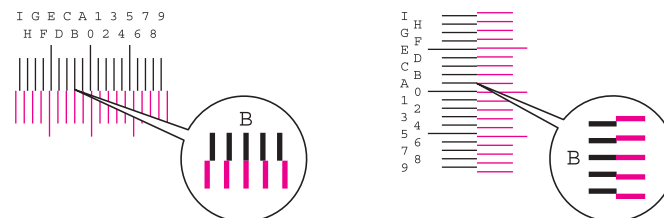


Figure 4-125

2. Select [◀] or [▶] key to change the values of H-1 to H-5 and V-3. Select [▲] or [▼] key to input the values read from the chart and press [OK] key.  
After a while completing the Magenta correction, the color registration correction (Detail) is displayed.  
Select [▲] key to shift the value 0 to 9. Select [▼] key when proceeding in the reverse direction.  
Select [▼] key to shift the value from 0 to alphabets of A to I. Select [▲] key when proceeding in the reverse direction.  
Numeric keys input is not available.
3. Repeat step 3 and 4 to adjust Cyan and Yellow.

4. e-activate the license if optional licensed product is installed.

(1) Card Authentication Kit(B)

(2) UG-33 (ThinPrint)

(3) Data Security Kit (E)

\*: Re-input four-digit encrypted code that was input at setup.

5. Reset the user default setting from the System Menu or Command Center.

## (2) Detaching and reattaching the engine relay PWB

1. Open the rear cover (a).

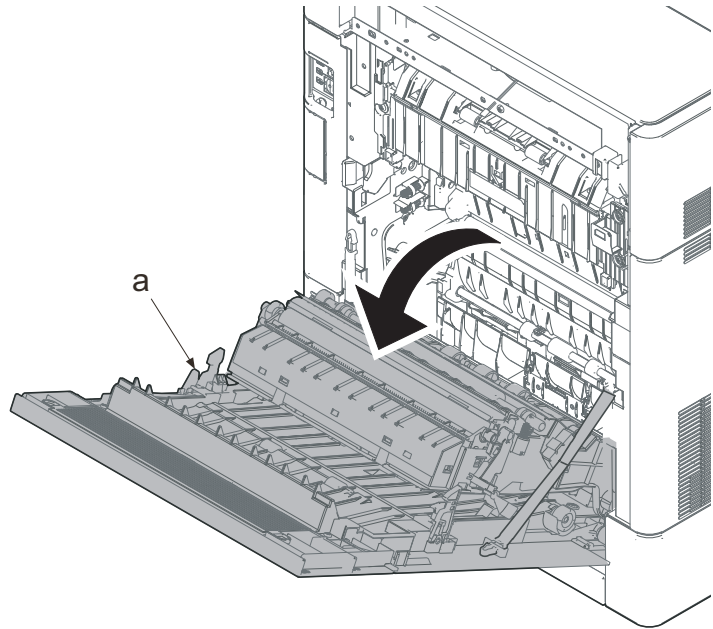


Figure 4-126

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

### IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

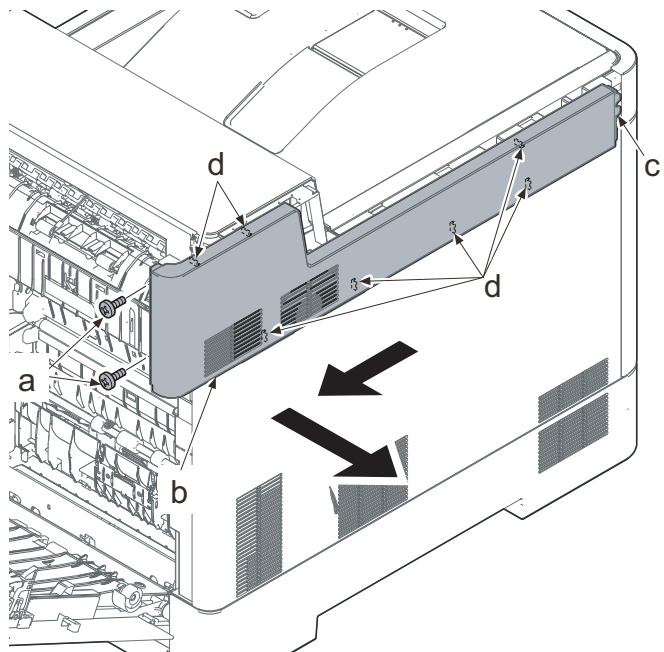


Figure 4-127

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

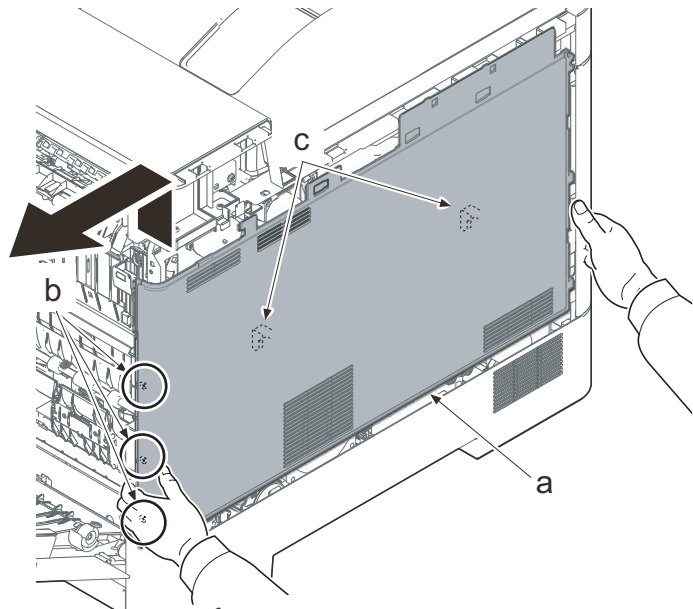


Figure 4-128

**IMPORTANT**

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). Slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

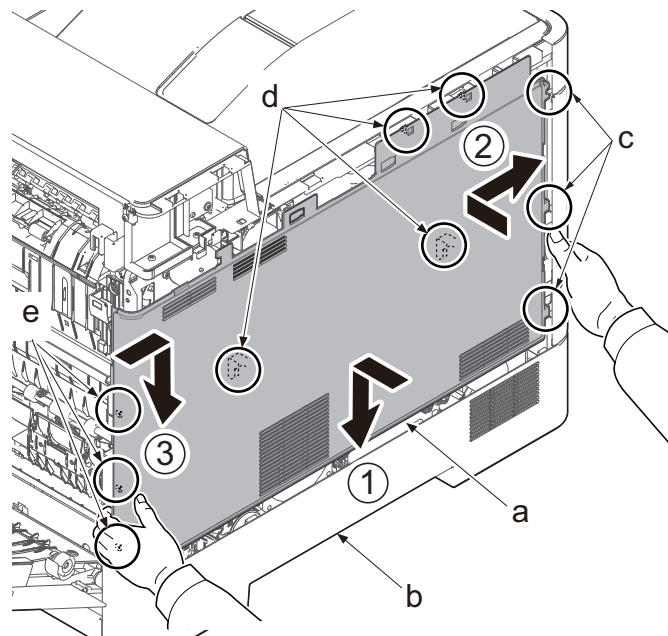


Figure 4-129



7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

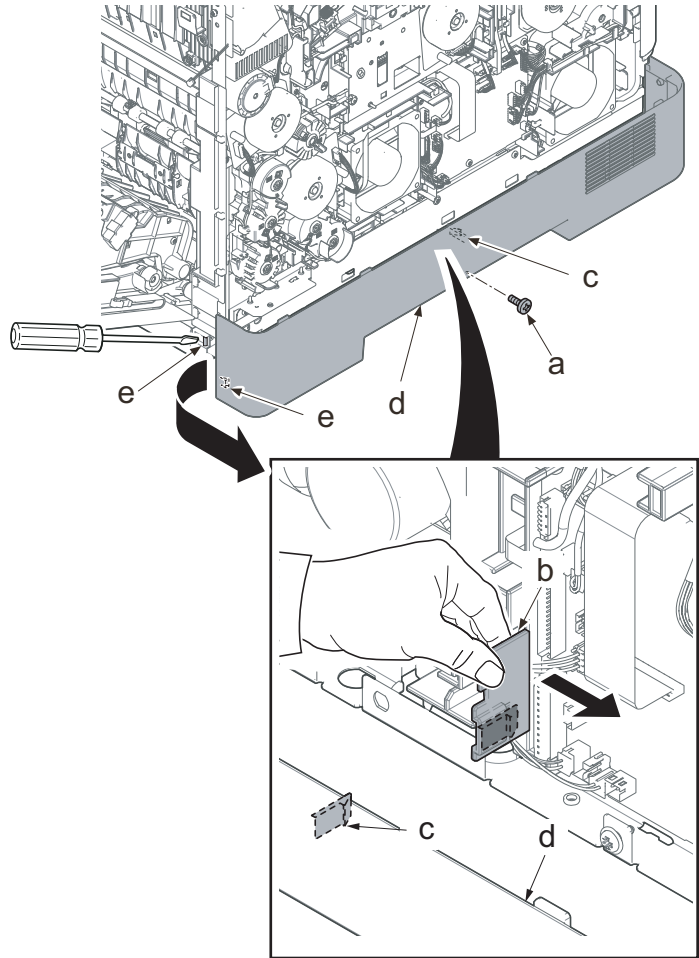


Figure 4-130

**IMPORTANT**

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, attach it with the screw.

Check if the hook at the center is surely fastened.

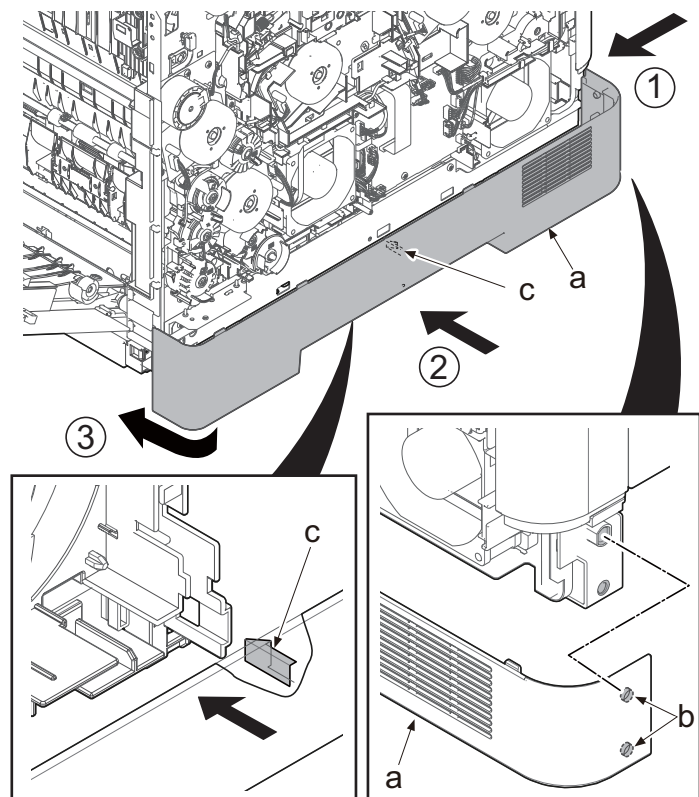


Figure 4-131

10. Disconnect all the connectors and FFCs from the engine relay PWB (a).  
30 ppm model: 23 connectors  
35/40 ppm model: 24 connectors  
YC27 is used only for 35/40 ppm model.

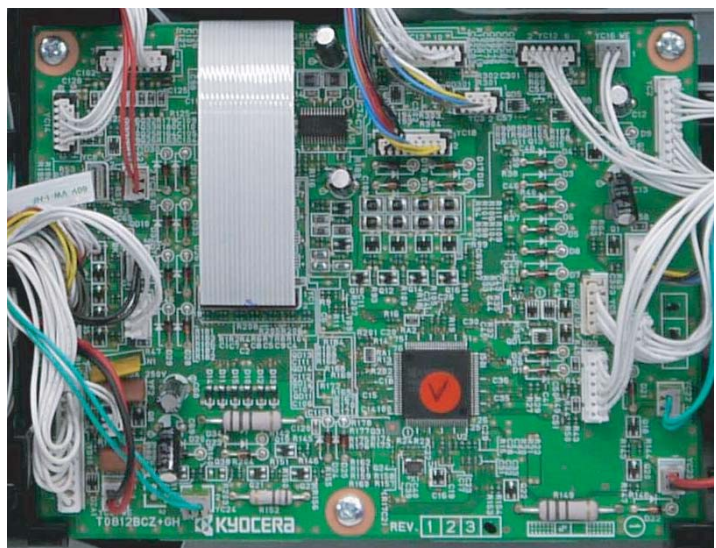
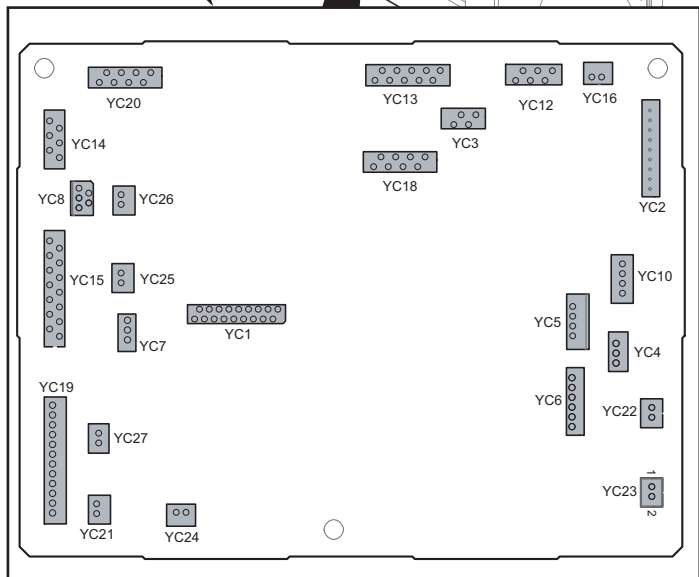
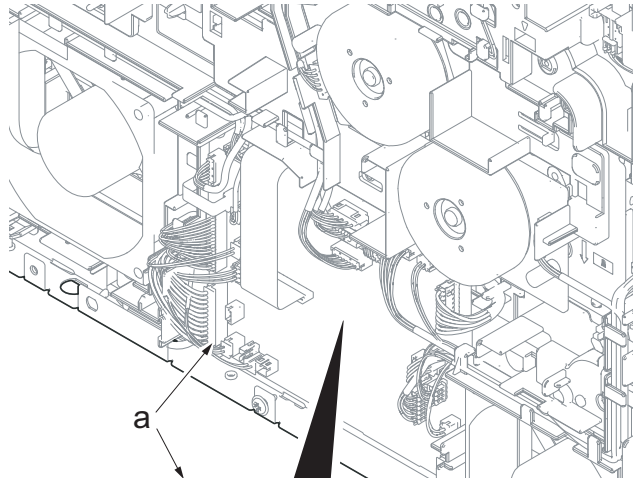


Figure 4-132

11. Remove three screws (a)(M3x8).
12. Detach the engine relay PWB (b).
13. Check the engine relay PWB and clean or replace it if necessary.
14. Reattach the parts in the original position.

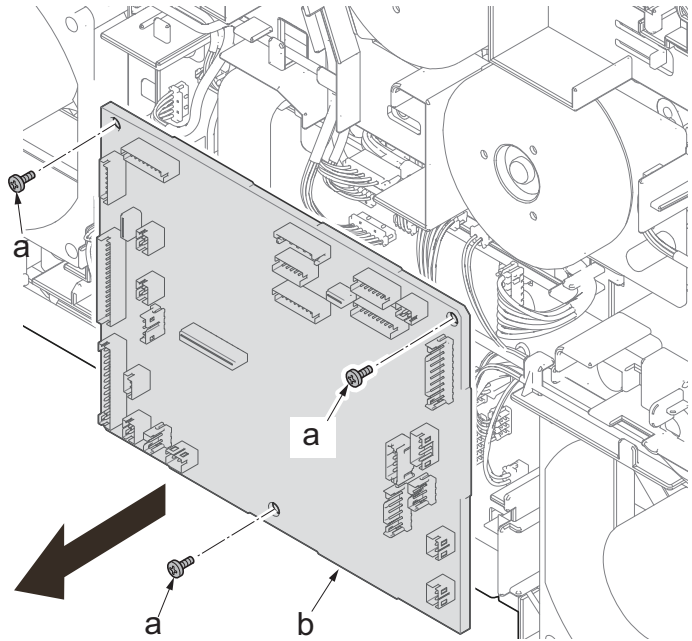


Figure 4-133

### (3) Detaching and reattaching the high-voltage PWB

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

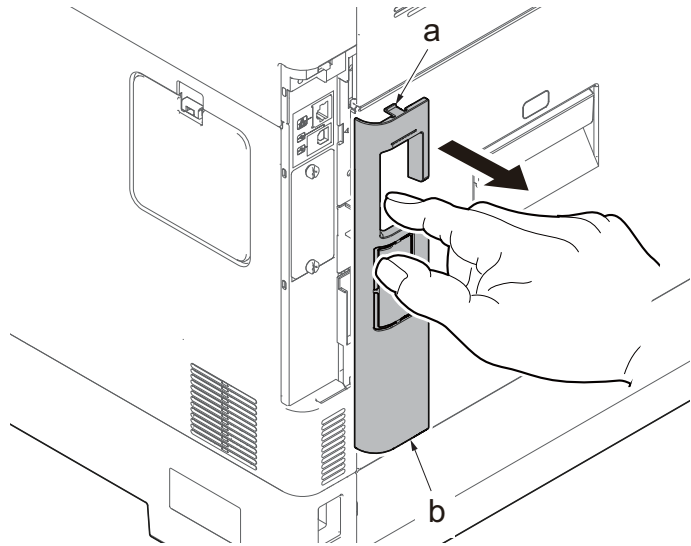


Figure 4-134

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

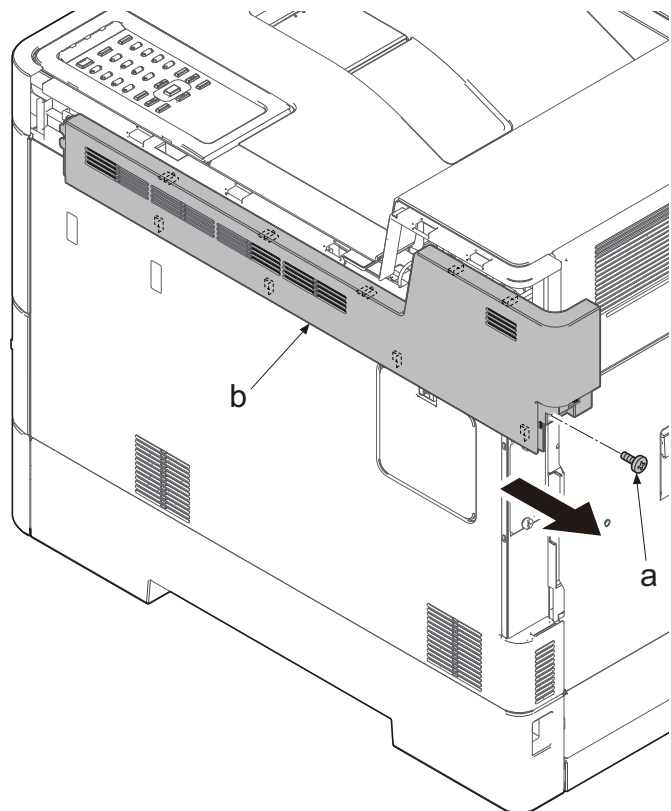
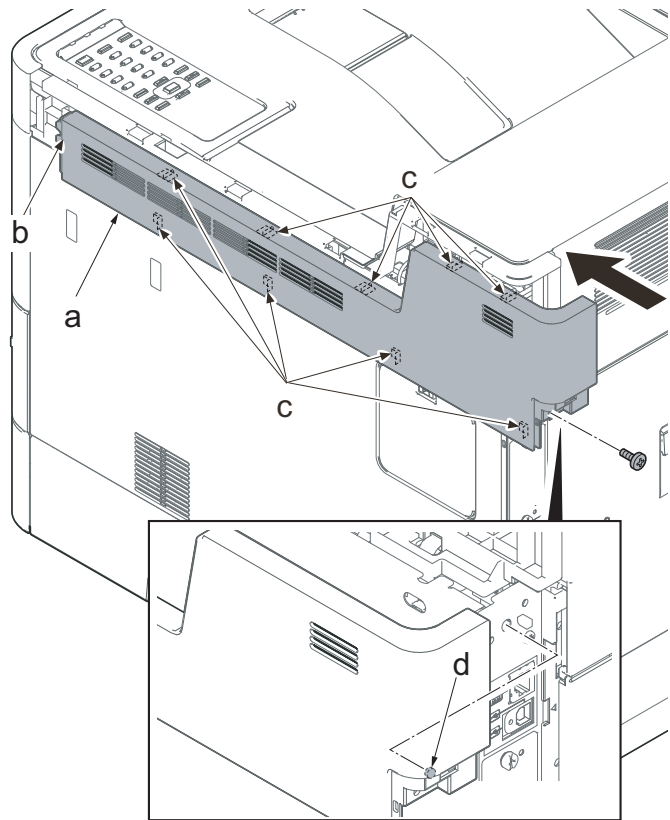


Figure 4-135

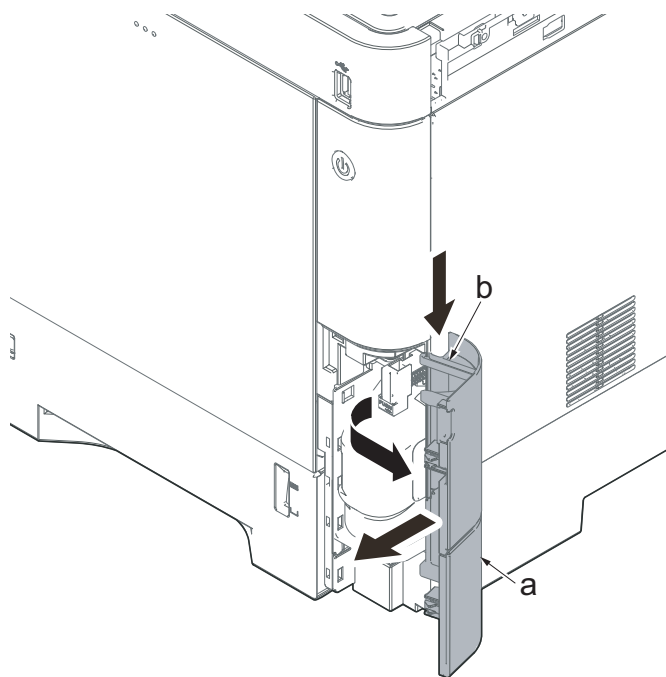
**IMPORTANT**

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-136**

5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).



**Figure 4-137**

8. Push the lever (a) and open the memory cover (b).
9. Remove the memory cover (b).

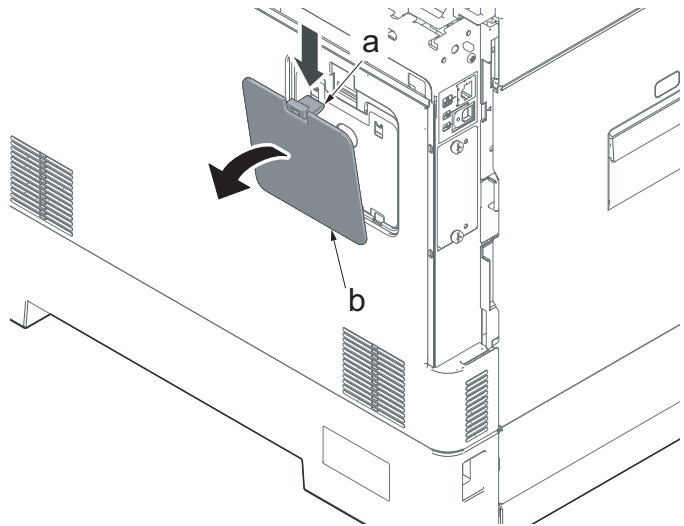


Figure 4-138

10. Pull up the shield lid (a) and pull it toward you to remove it.

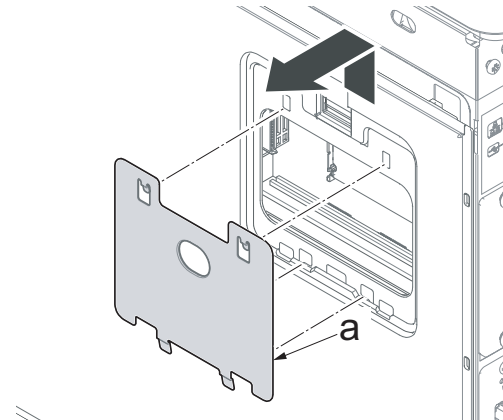


Figure 4-139

11. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

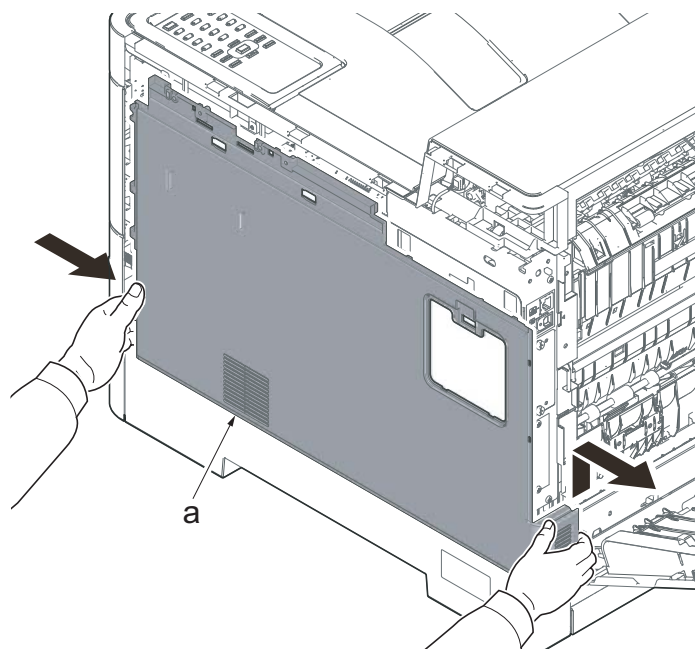
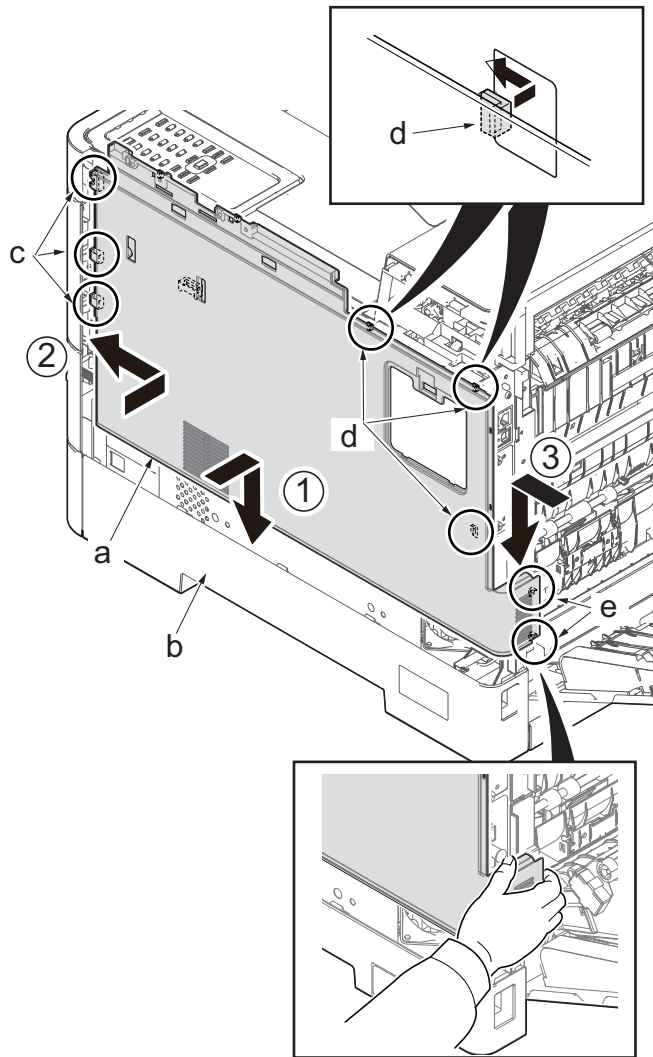


Figure 4-140

**IMPORTANT**

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side.

Check if three hooks (d) at the machine rear side are surely fastened.



**Figure 4-141**



- 12. Pull the lever (a).
- 13. Open the top tray (b).

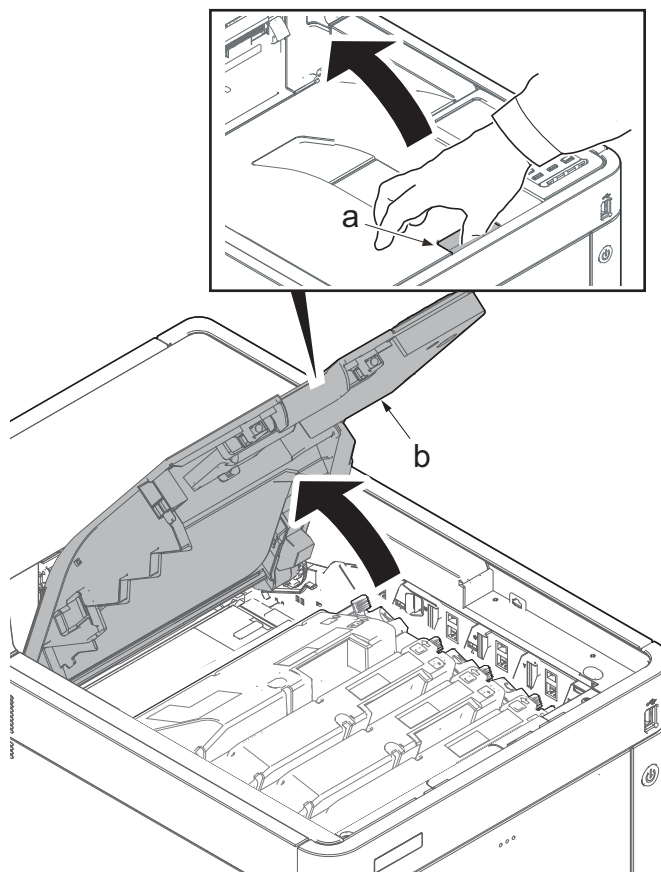


Figure 4-142

- 14. Open the MP tray (a).
- 15. Remove two screws (b)(M3x8).
- 16. Open the waste toner cover (c).

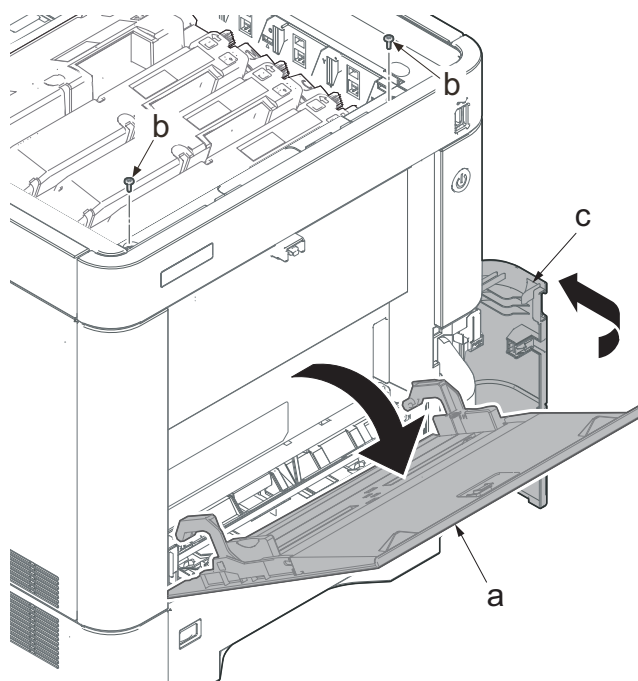


Figure 4-143



17. Slightly lift up the front cover (a) to release the boss (b).
18. Tilt the front cover (a) toward the machine front side.
19. Then, remove the front cover (a) by lifting it up.

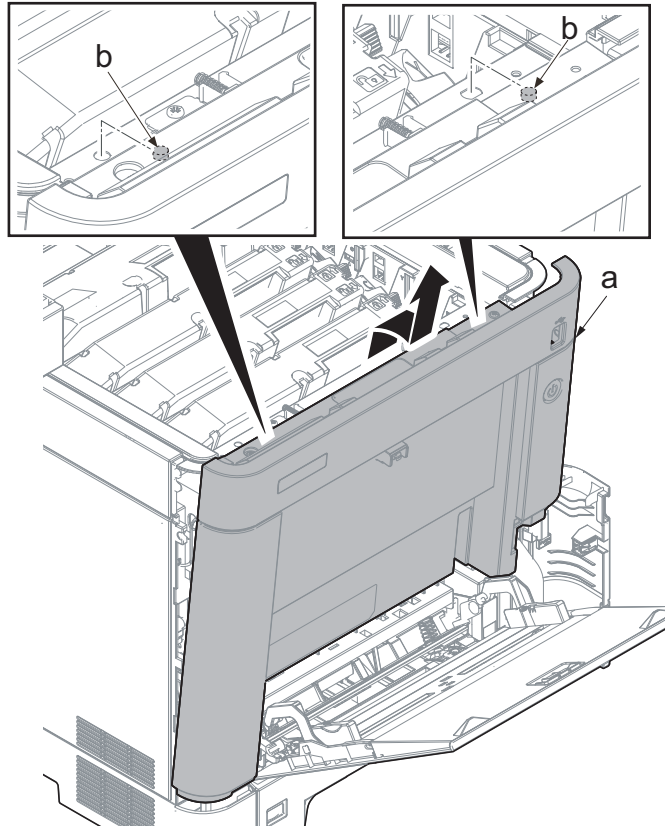


Figure 4-144

**IMPORTANT**

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, "cover open" will be displayed.

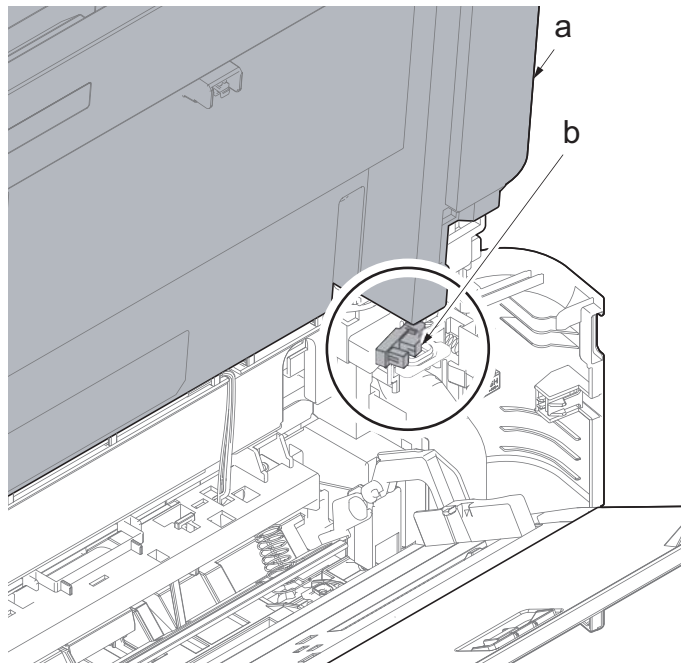


Figure 4-145

20. Remove the screw (a)(M3x8).

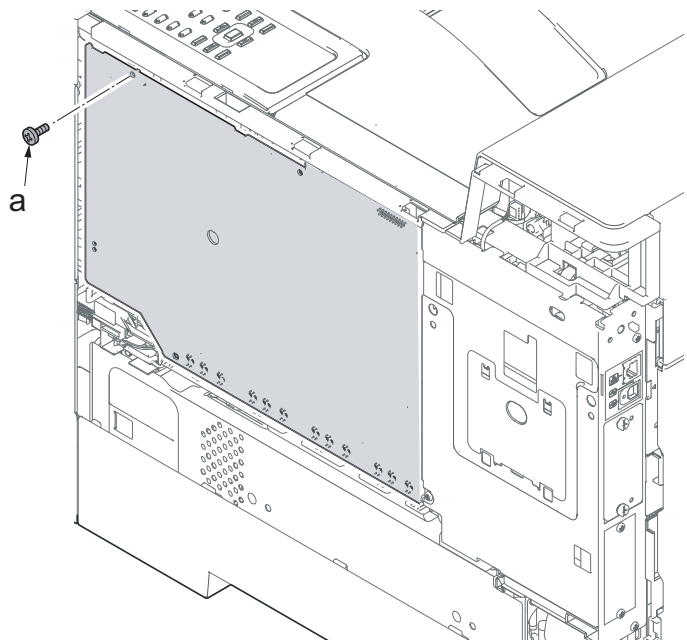


Figure 4-146

- 21. Release four hooks (a) at both sides of the high-voltage PWB (c).
- 22. Slightly tilt the PWB toward you and release the FFC (b).

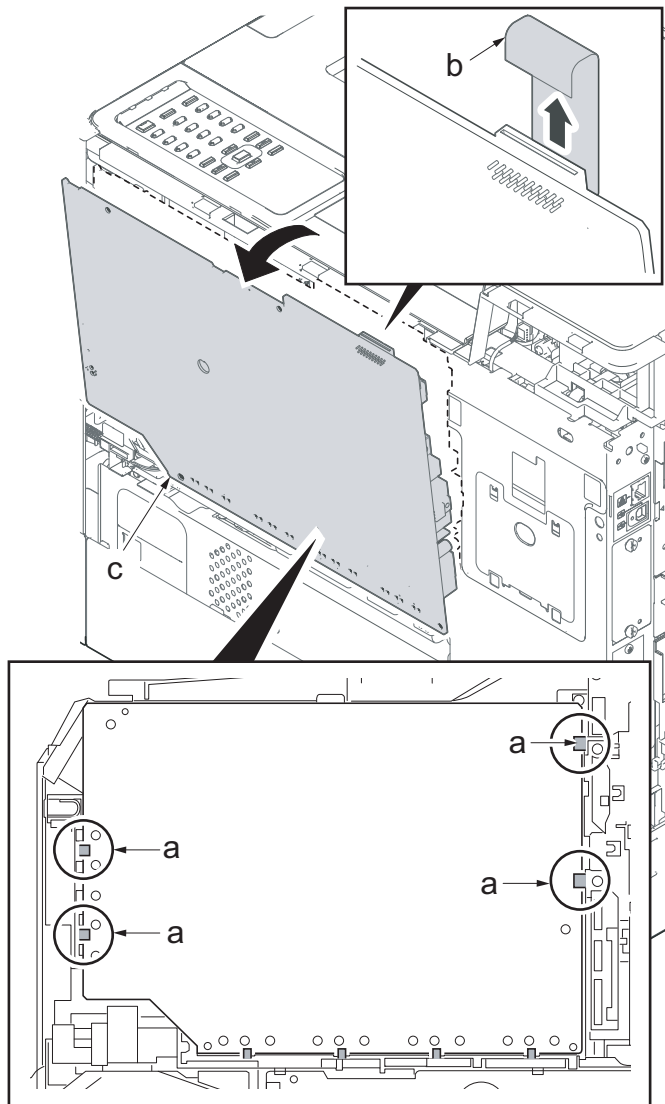


Figure 4-147

23. Tilt the high-voltage PWB (a) to 90 degrees and pull it out toward you.

\*: The lower hook (b) on the PWB might break if removing it without push it down.

24. Check the high-voltage PWB and clean or replace it if necessary.

25. Reattach the parts in the original position.

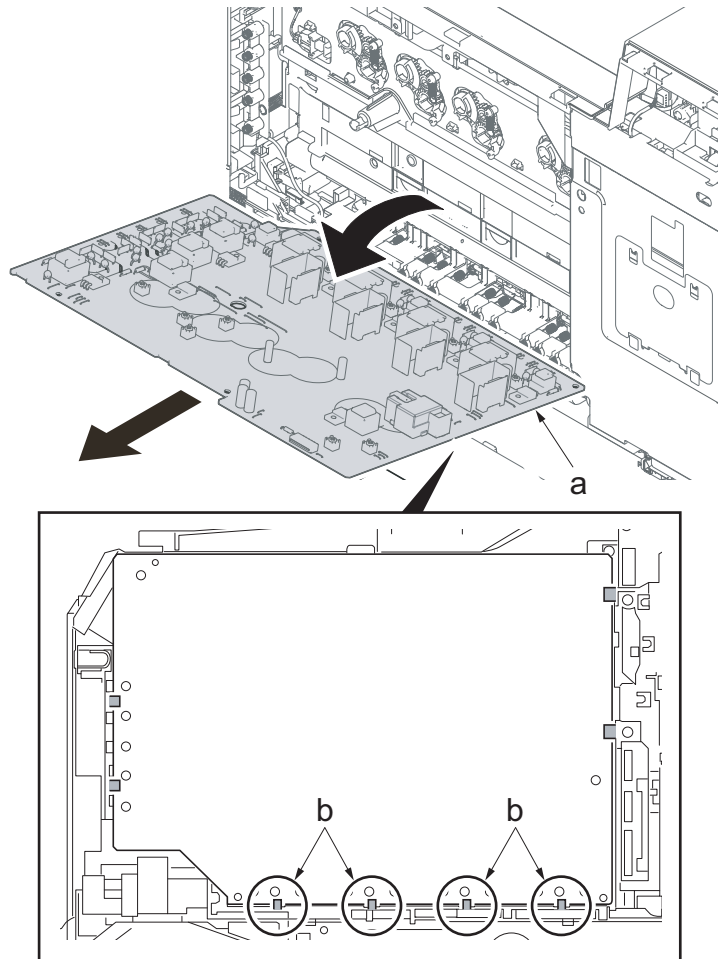


Figure 4-148

**IMPORTANT**

When reattaching the high-voltage PWB (d), insert the lower part of the PWB into four of the lower hooks (b) and insert the left and right positioning pins (c) into the holes. Then, raise the PWB and apply two hooks each at the left and right side.

After reattaching the high-voltage PWB (d), check that it is secured with two hooks at the each left and right side and four hooks (b). (If the hook is not fastened, the image failure might appear.)

Also, check the terminal spring (e) contacts the terminal (f). (Check from The PWB hole)

Terminal :

Lower side: 12

Left side: 5 (30/35 ppm model)

1: (40 ppm model)

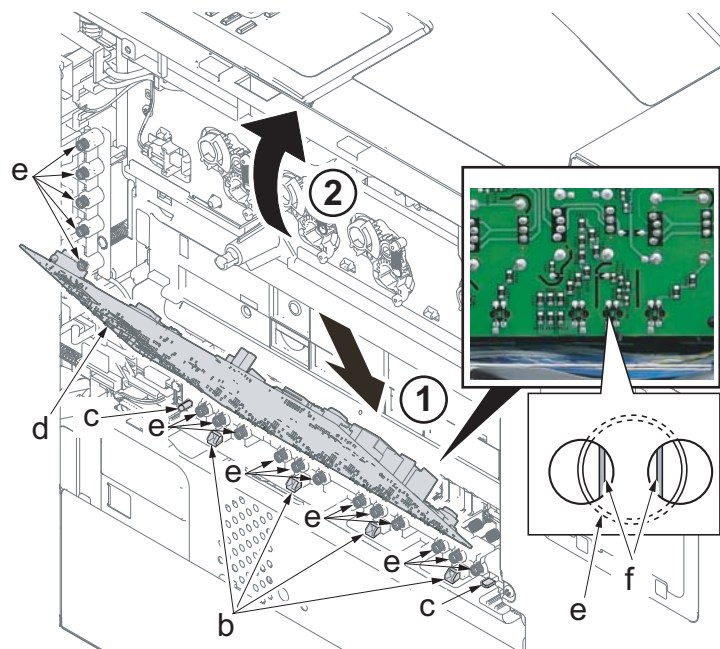


Figure 4-149

#### (4) High-voltage PWB 2 (40 ppm model only)

1. Lift the handle (a) and open the top tray (b).

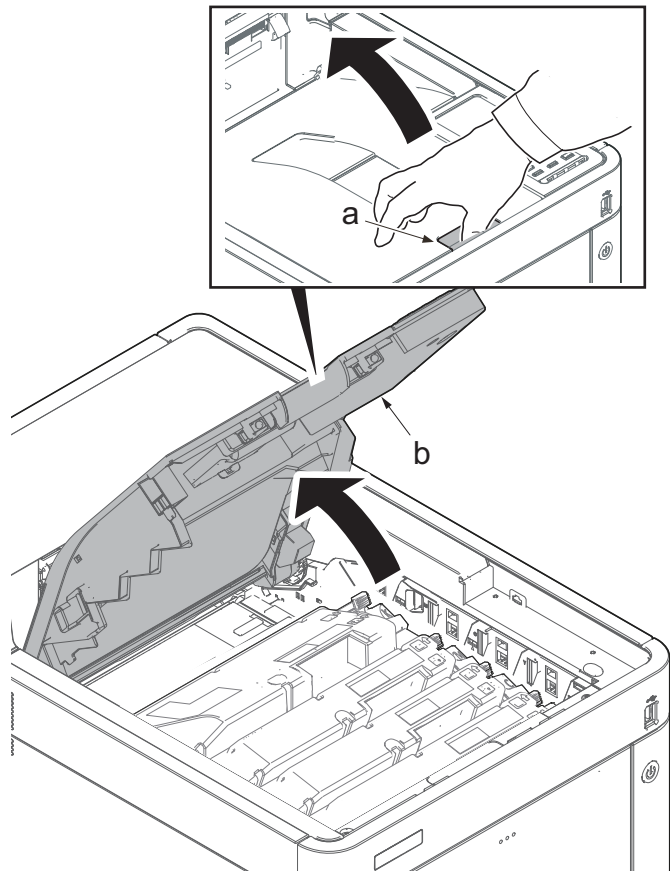


Figure 4-150

2. Open the MP tray (a).
3. Remove two screws (b)(M3x8).
4. Open the waste toner cover (c).

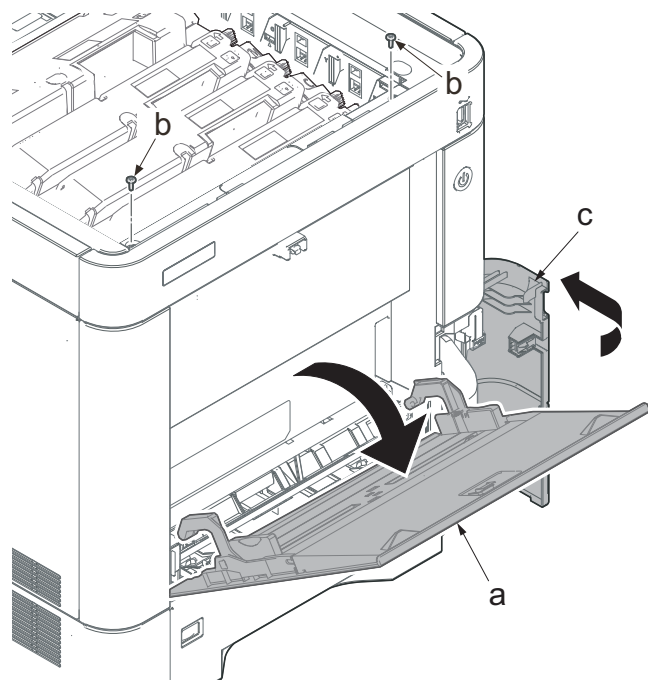


Figure 4-151

5. Slightly lift up the front cover (a) to release the boss (b).
6. Tilt the front cover (a) toward the machine front side.
7. Then, remove the front cover (a) by lifting it up.

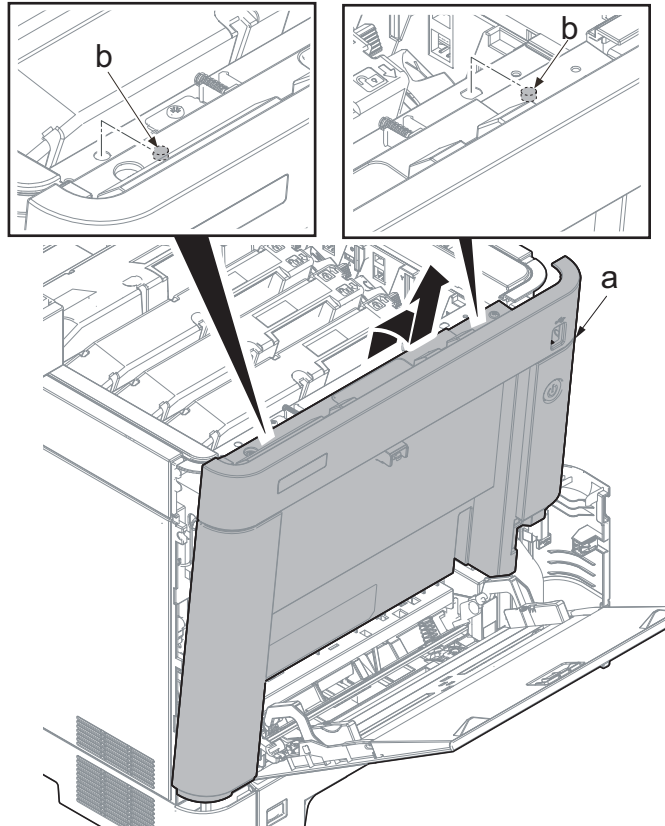


Figure 4-152

**IMPORTANT**

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, "cover open" will be displayed.

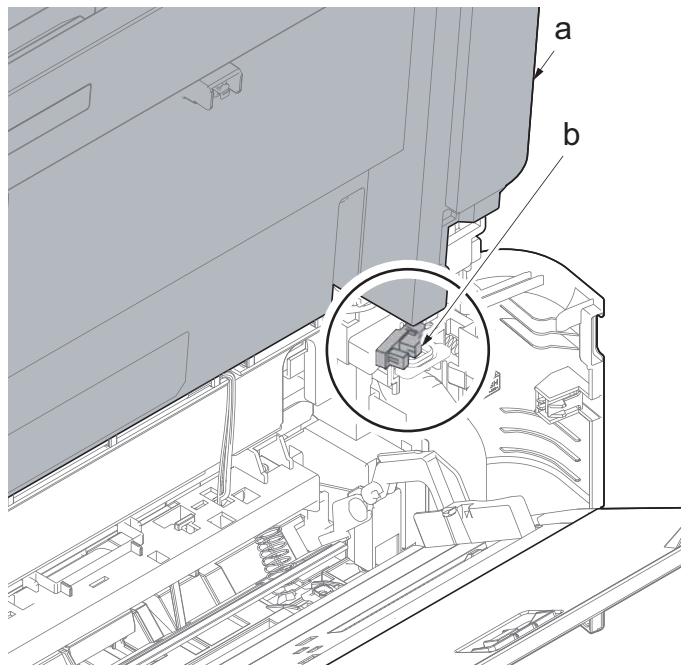


Figure 4-153

- 8. Disconnect the connector (a).
- 9. Remove the screw (b)(M3x8).

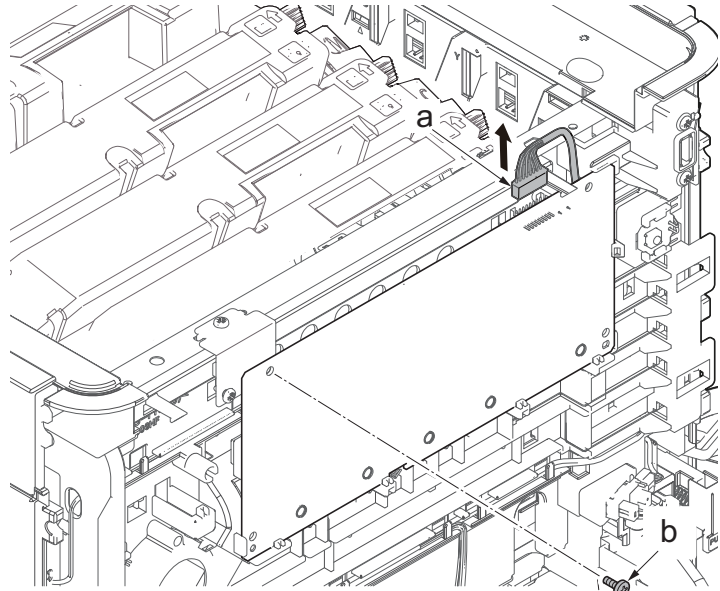


Figure 4-154

- 10. Release two hooks (a) and remove the high-voltage PWB 2 (b).

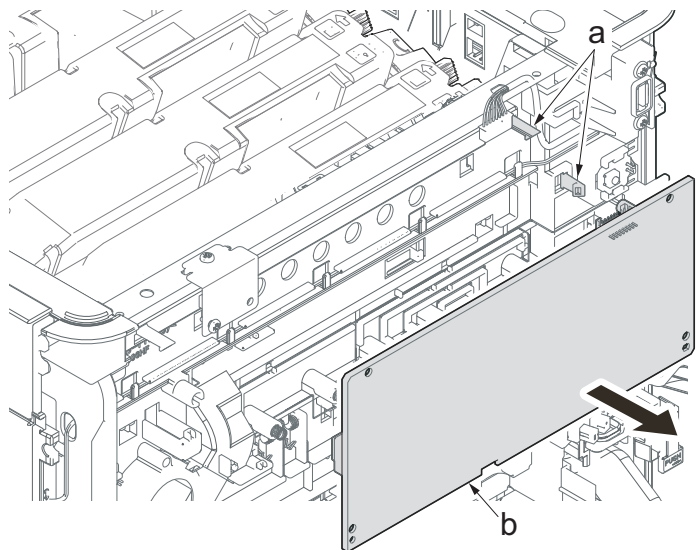


Figure 4-155

**IMPORTANT**

When reattaching the high-voltage PWB 2 (a), insert the lower part of the PWB into four of the lower hooks (b) and insert two right hooks while lift up it. Also, check the terminal spring (c) contacts the terminal (d). (Check from The PWB hole)

Terminal :  
Lower side: 5

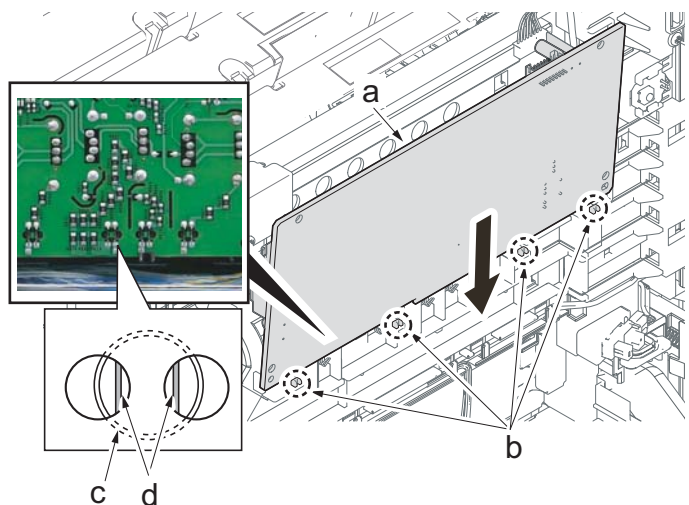


Figure 4-156



## (5) Detaching and reattaching the power supply PWB

### IMPORTANT

Even if the power switch of the main unit is turned off and the power cord is unplugged, the electric charge may remain in the capacitors on the low voltage PWB, so that please be careful not to touch the mounted parts to protect you from electric shock.

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

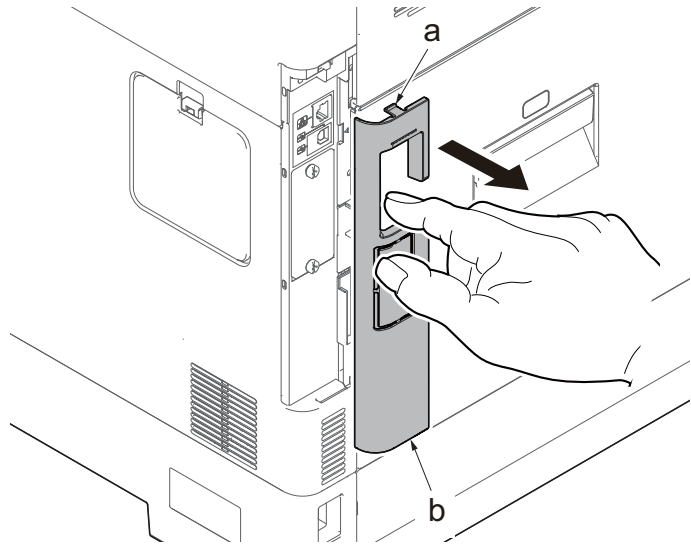


Figure 4-157

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

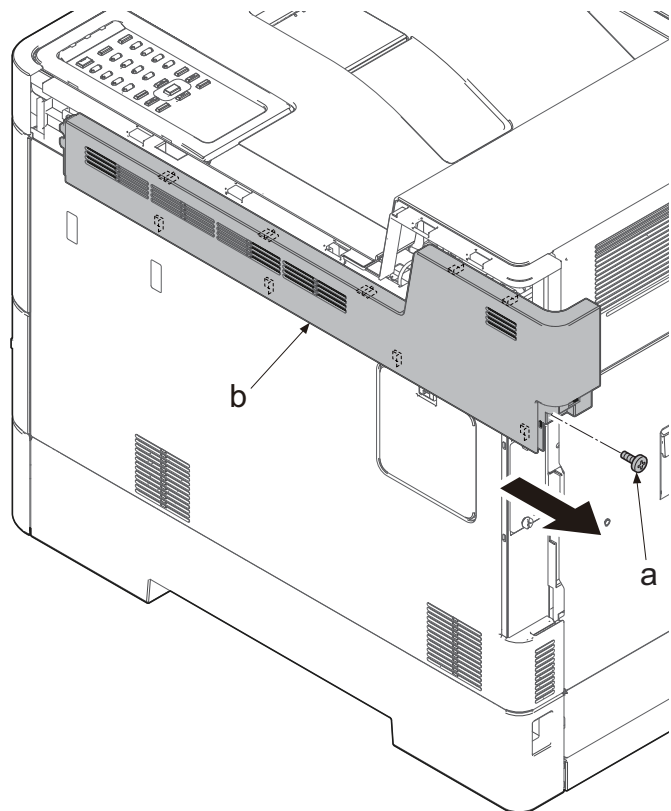
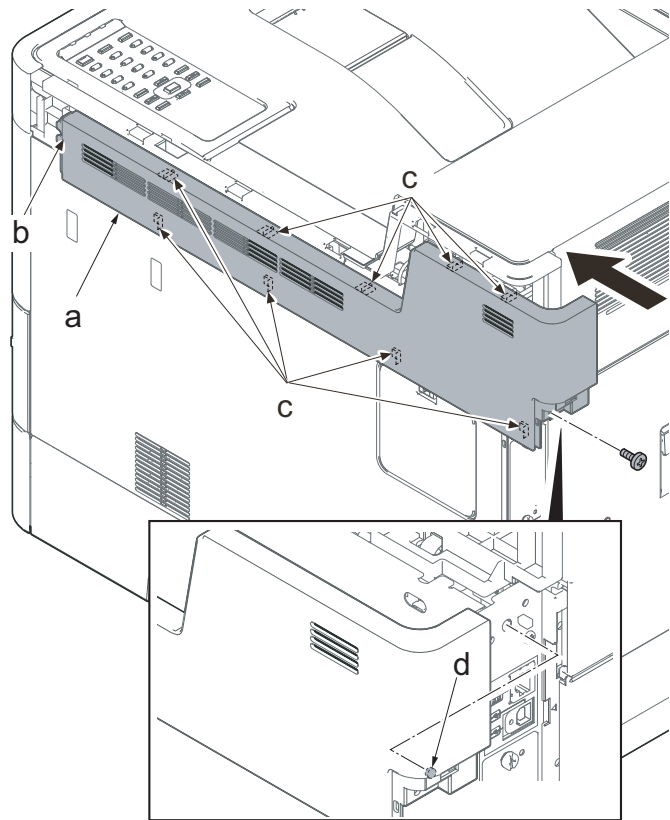


Figure 4-158

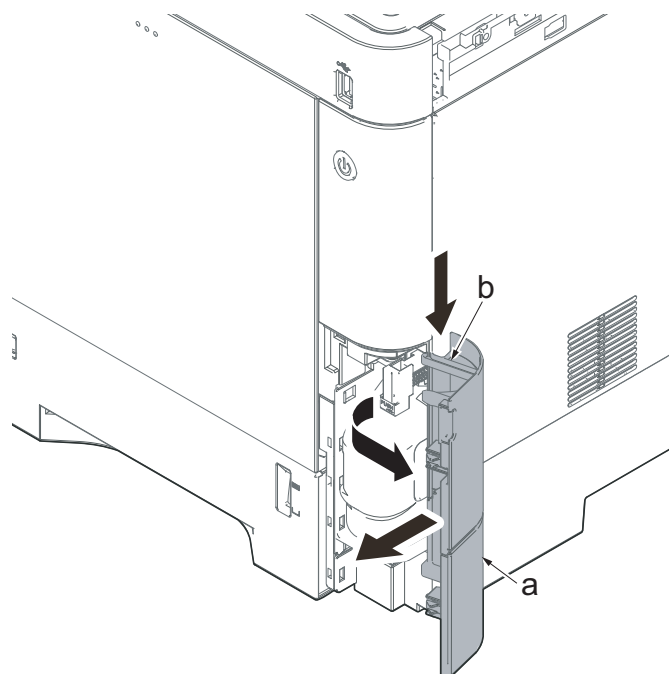
**IMPORTANT**

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-159**

5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).



**Figure 4-160**



8. Push the lever (a) and open the memory cover (b).
9. Remove the memory cover (b).

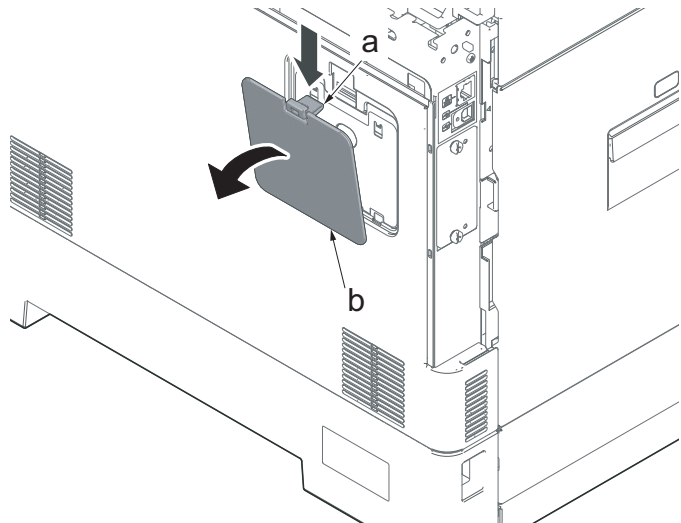


Figure 4-161

10. Pull up the shield lid (a) and pull it toward you to remove it.

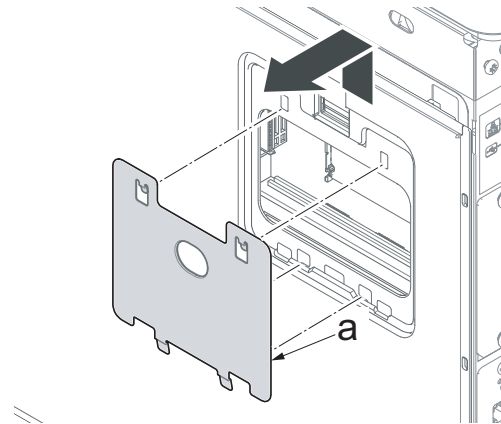


Figure 4-162

11. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

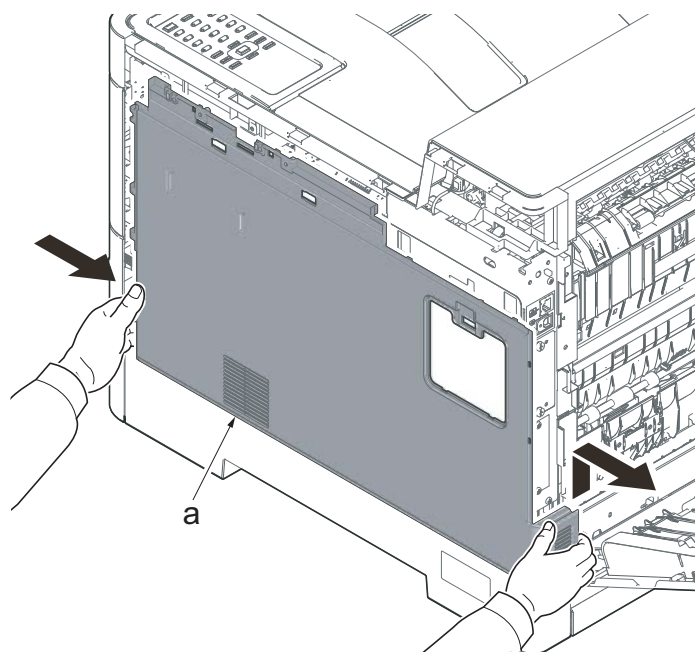
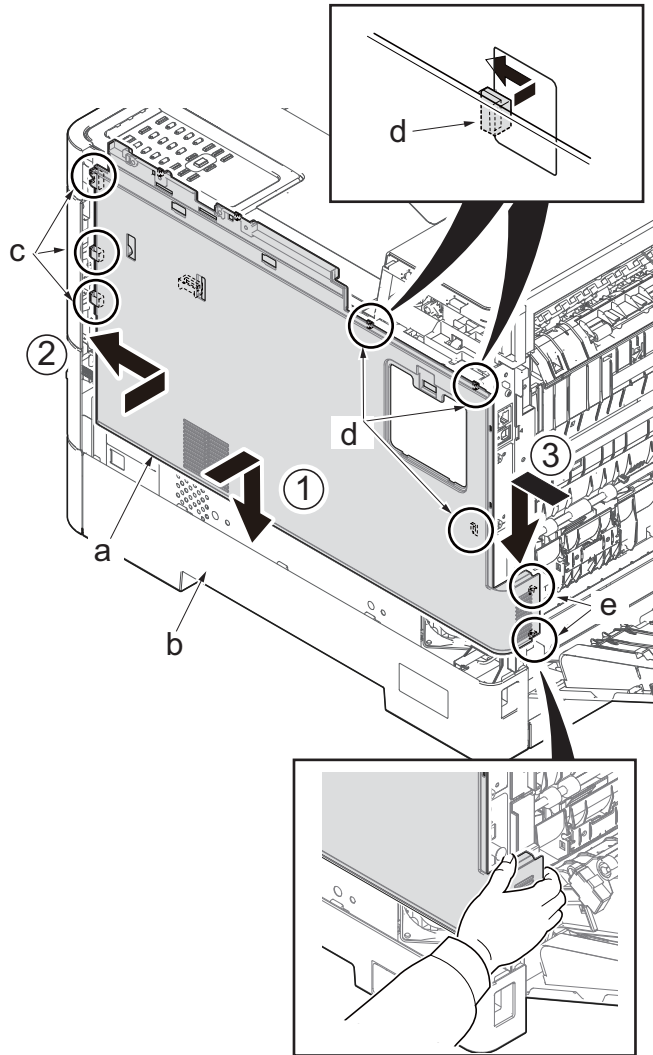


Figure 4-163

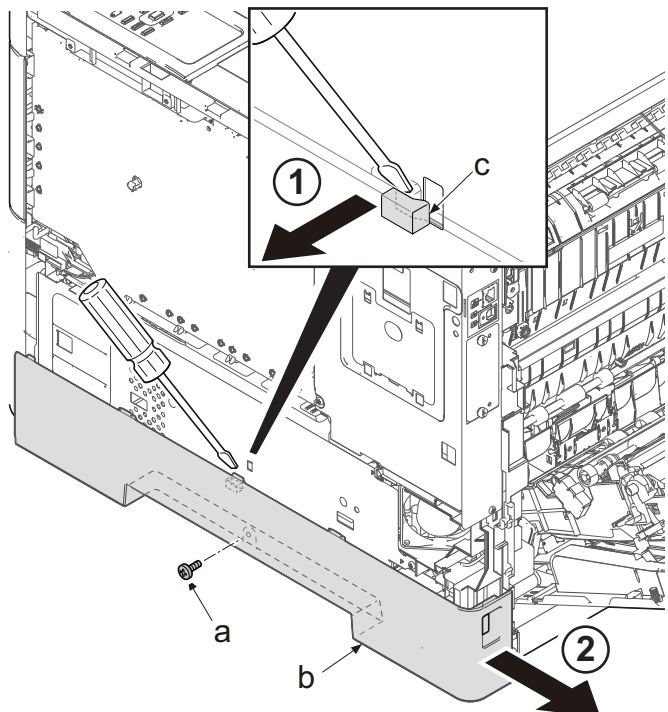
**IMPORTANT**

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side. Check if three hooks (d) at the machine rear side are surely fastened.



**Figure 4-164**

12. Remove the screw (a)(M3x8).
13. Release the hook (c) of the lower right cover (b) toward the machine right side and slide it toward the machine rear side to detach it.



**Figure 4-165**

14. Remove two screws (a)(M3x8: P-tite)
15. Remove the screw (b)(M3x8: S-tite)
16. Release the hook (c).
17. Remove the power supply shield (d).

\*: The screw (a) and (b) are different and secure them at the original place.

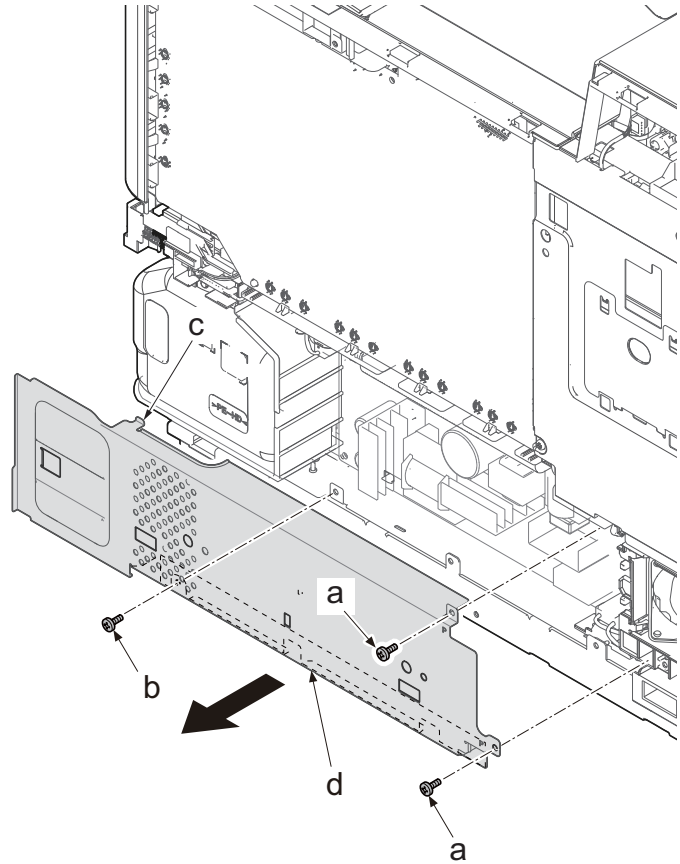


Figure 4-166

18. Disconnect all the connectors from the power supply PWB (a). (five connectors)
19. Remove two screws (b)(M3x8).
20. Release two hooks (c).
21. Remove the power supply PWB (a).
22. Check the operation panel PWB and clean or replace it if necessary.
23. Reattach the parts in the original position.

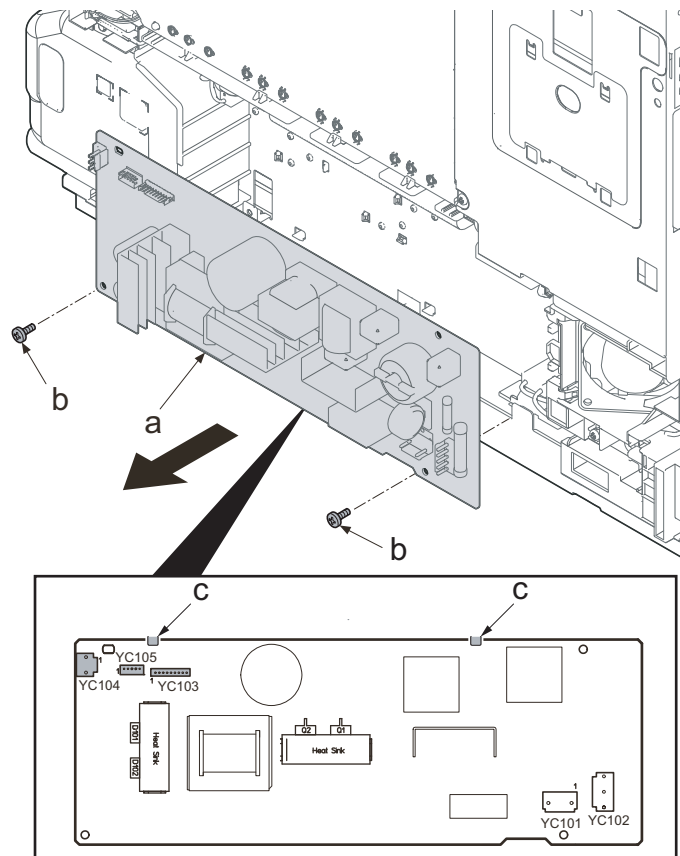
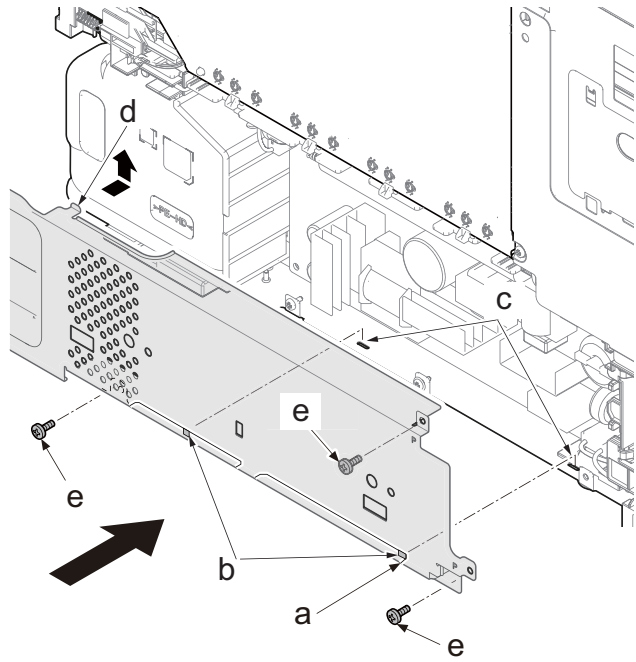


Figure 4-167

**IMPORTANT**

When reattaching the power supply shield (a), insert the lower two hooks (b) into the square holes (c) of the main unit and fasten the upper hook (d). Then, secure it with the screws (e).



**Figure 4-168**

## (6) Detaching and reattaching the operation panel PWB

1. Open the top tray (a).
2. Insert the flat-blade screwdriver (c) into the square hole (b) of the top tray and release the two hooks (e) of the operation panel (d).
3. Lift up the operation panel and remove from the top cover.

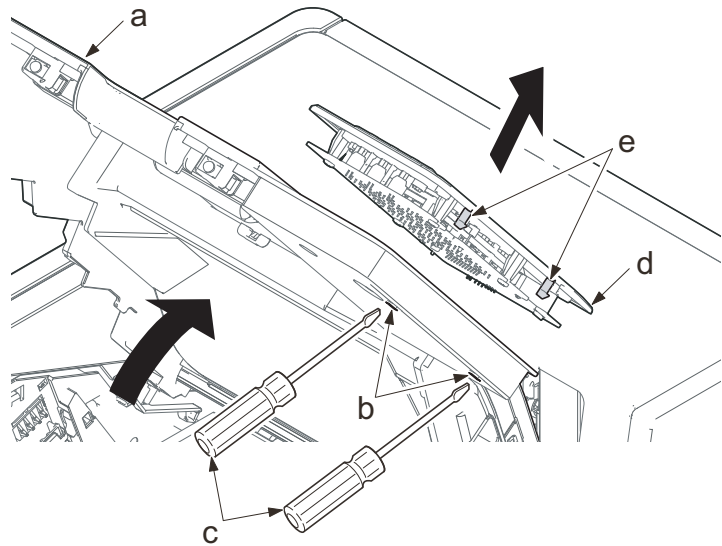


Figure 4-169

### 30 ppm model

4. Disconnect the FFC and remove the operation panel.

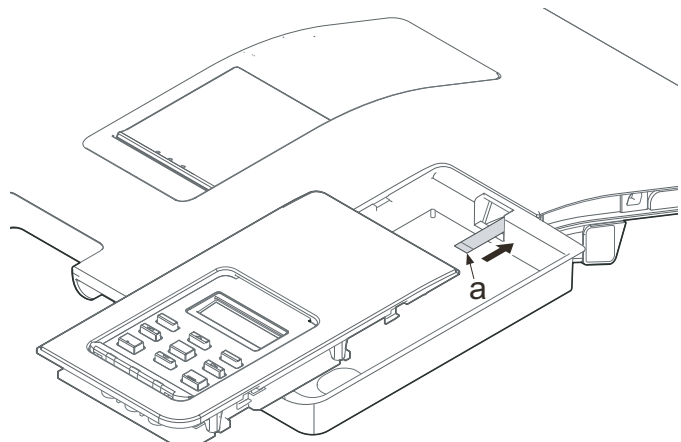


Figure 4-170

### 35/40 ppm model

4. Disconnect the FFC (a) and the ground wire (b) and remove the operation panel.

### IMPORTANT

When reattaching the operation panel, push to attach the connection part of the ground wire (b) into the opening section of the top tray.

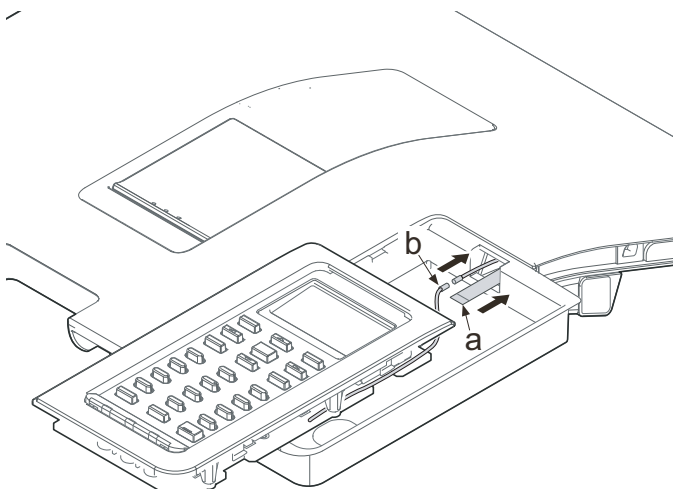


Figure 4-171

## 4-6 Other parts

### (1) Optical section (Laser scanning)

#### (1-1) Detaching and reattaching the LSU

1. Lift the handle (a) and open the top tray (b).

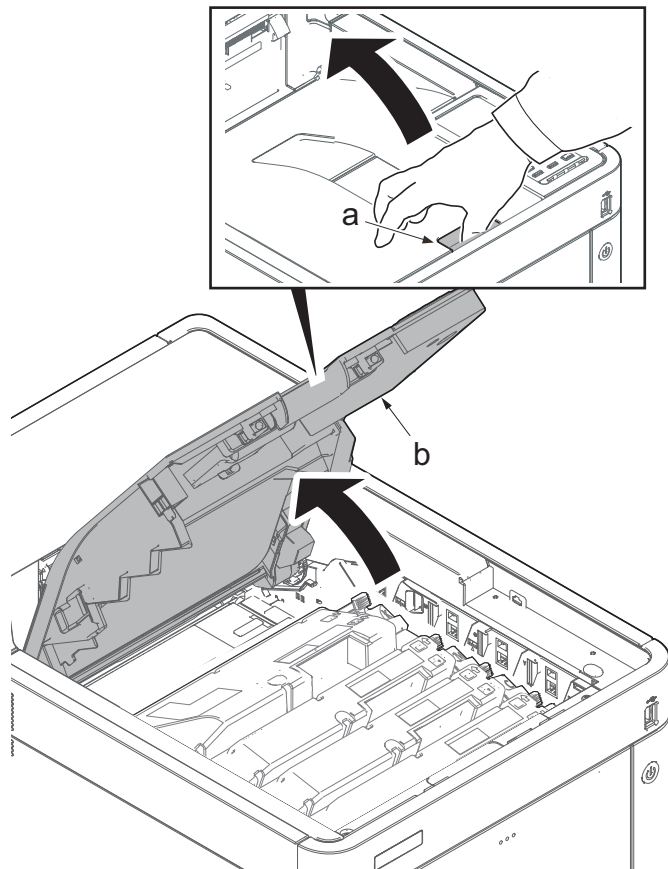


Figure 4-172

2. Rotate the lock lever (a).

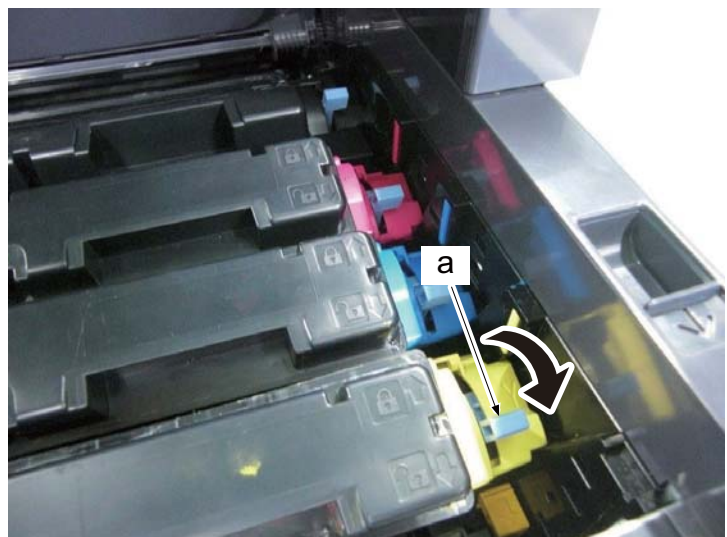


Figure 4-173

3. Detach the toner containers (K, M, C and Y)(a).

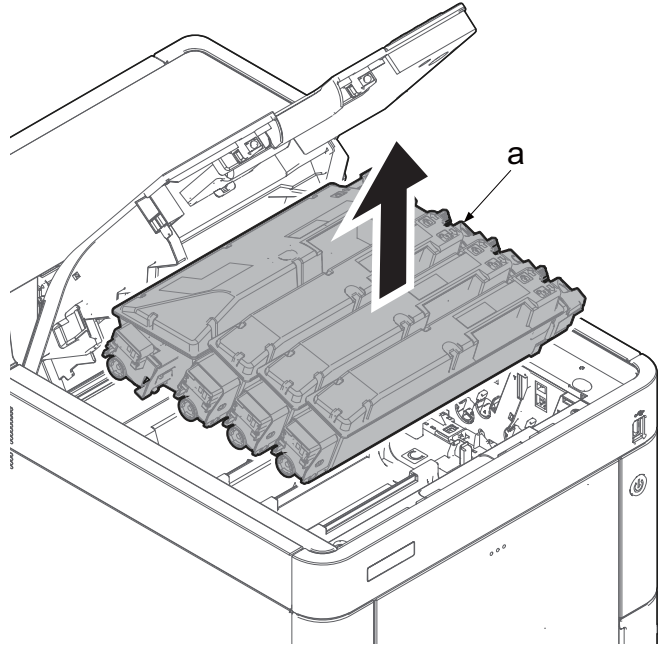


Figure 4-174

\*: When detaching the toner container (a), first lift its handle (b) and then pull it out upward.

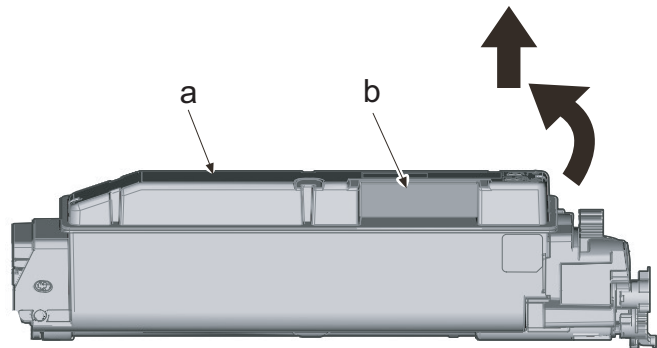


Figure 4-175



4. Pull the right shutter lever (a) in the direction of the arrow.

\*: Close the toner feed inlet by pulling this lever.

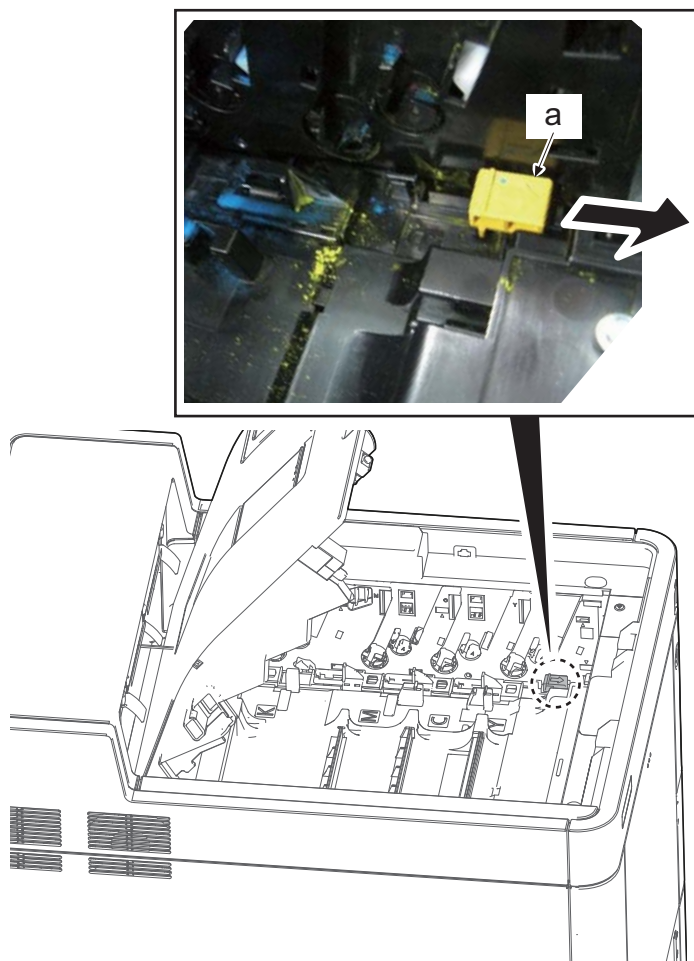


Figure 4-176

5. Remove the screw (a)(M3x12).

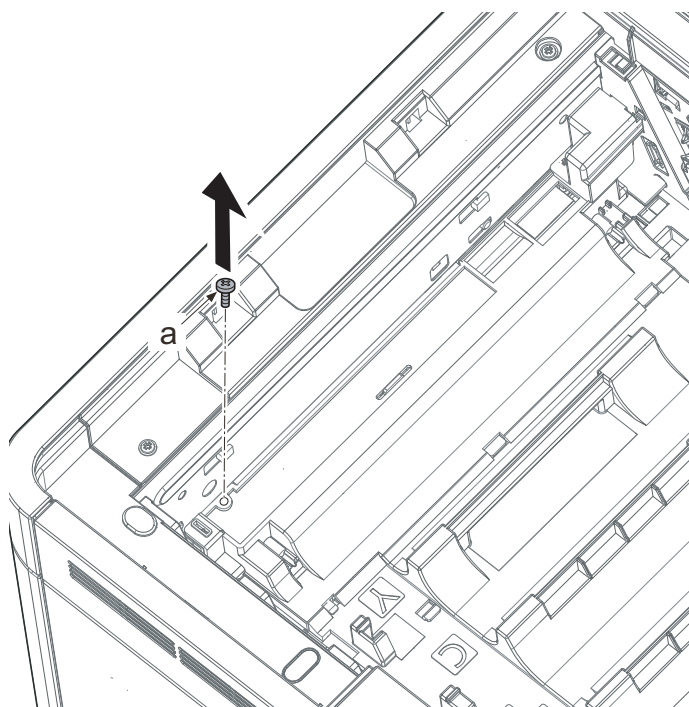


Figure 4-177



6. Remove the screw (a)(M3x12).
7. Remove the lever cover (b).
8. Lift up the drive release lever (c).

\*: When raising the lever, the joint of the drive coupling is released.

**IMPORTANT**

If omitting to attach the lever cover, "Cover open" message is displayed while the tray swithc is not turned on.

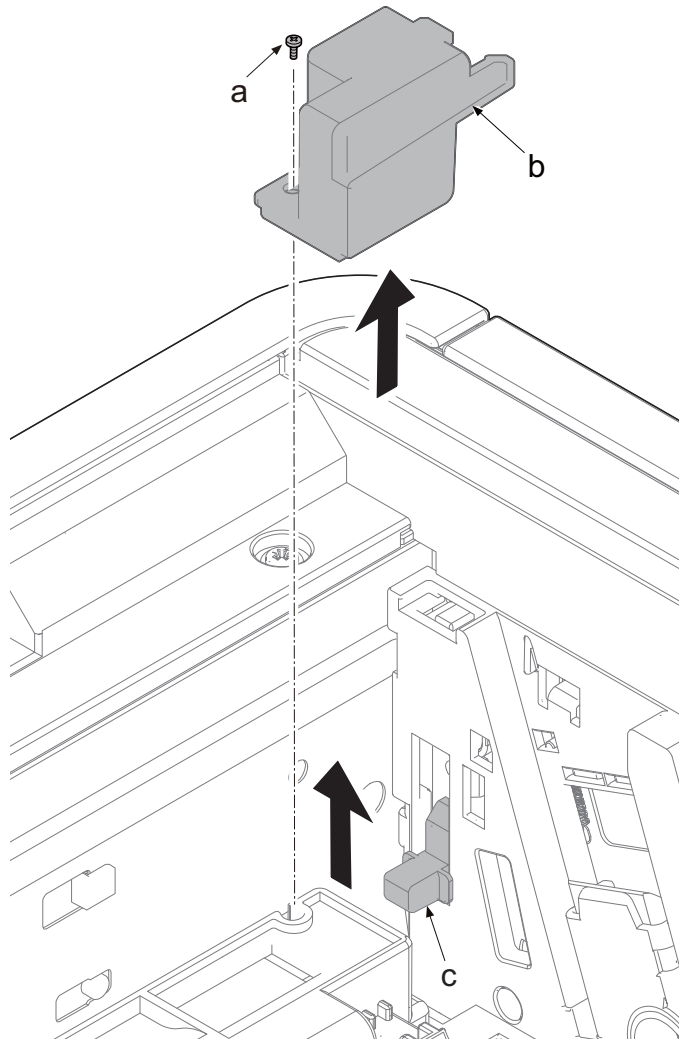


Figure 4-178

9. Hold the handle (a) and detach the primary transfer unit (b).

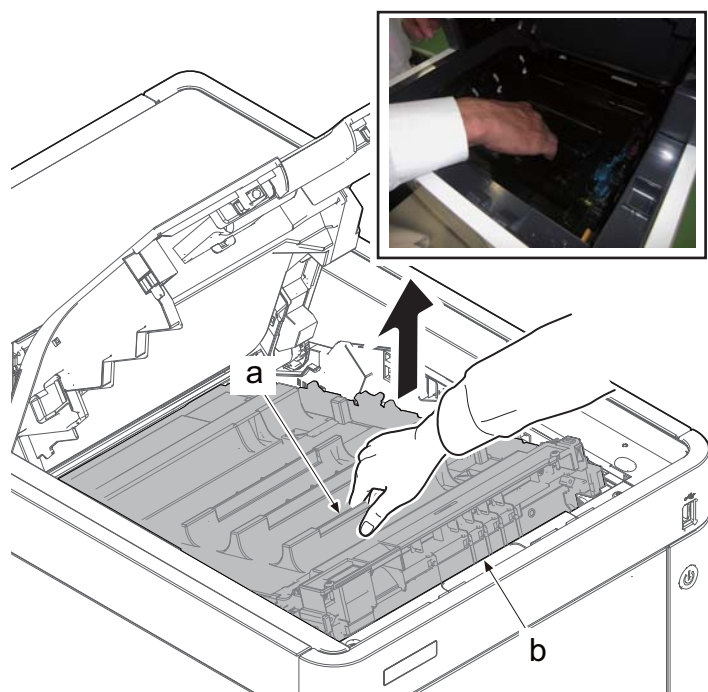


Figure 4-179

\*: Hold the handle (b) at the machine front side and lift up the primary transfer unit (a). Then, further lift it up and pull it toward the machine front side to detach.

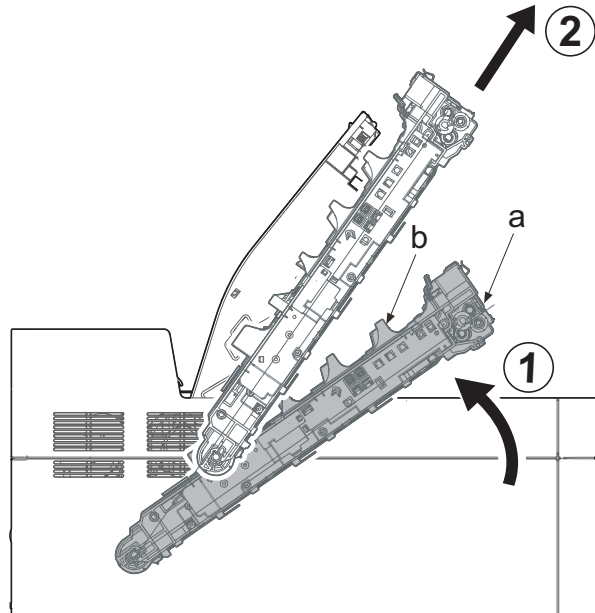


Figure 4-180

\*: When removing the primary transfer unit (a) or it is unstable to install it, hold the handle (b) at the machine rear side by the other hand

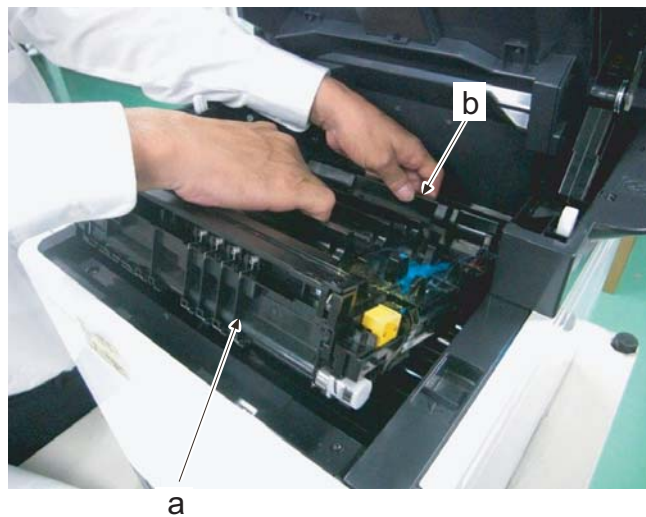


Figure 4-181

\*: Do not touch the release lever (b) after detaching the primary transfer unit (a). This lever (b) is connected with the shutter lever (c) and so they are released together by installing the toner container into the main unit. The operation mistakenly open the toner feed inlet (d).

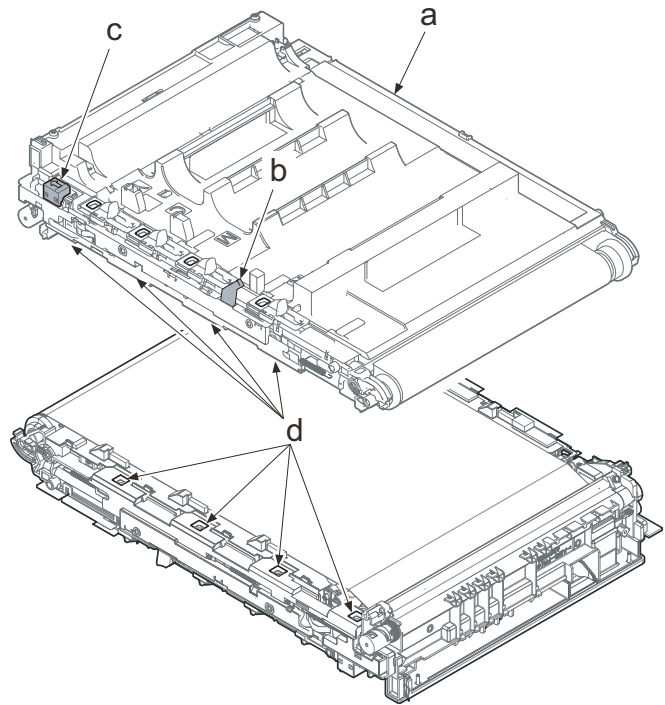


Figure 4-182

10. Detach the drum unit (M,C and Y)(a) by pulling it up. Lift up the drum unit (K)(b) and pull it toward the machine front side to detach it.

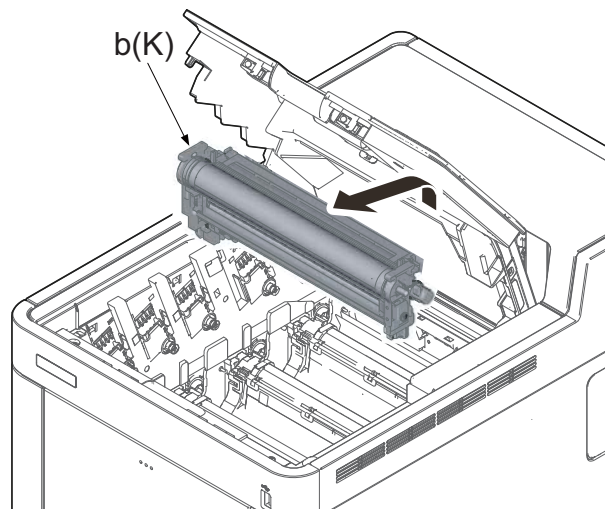
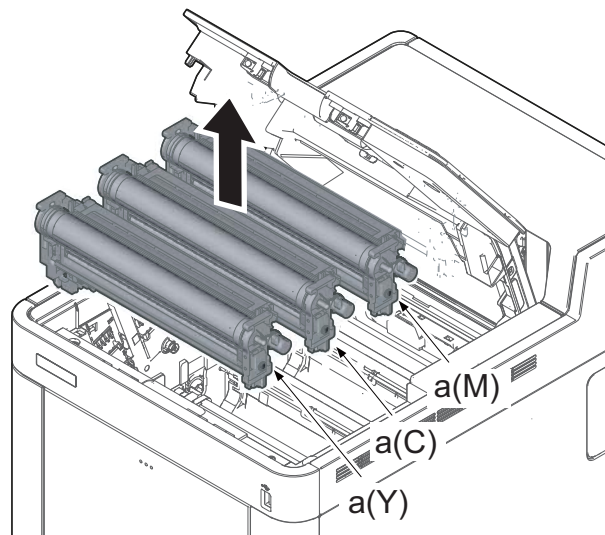
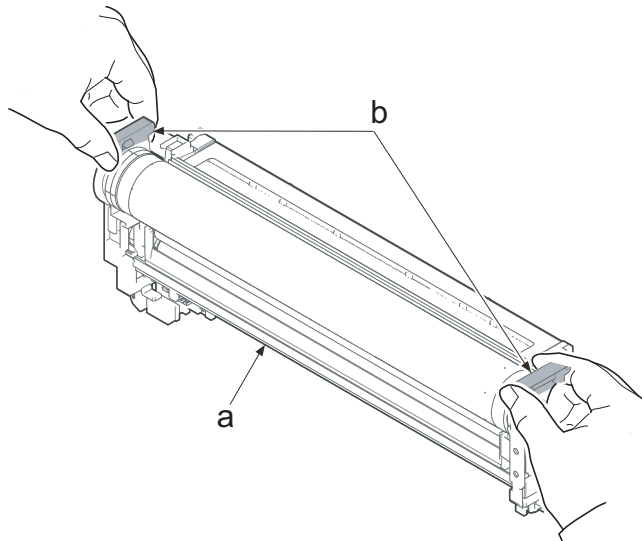


Figure 4-183

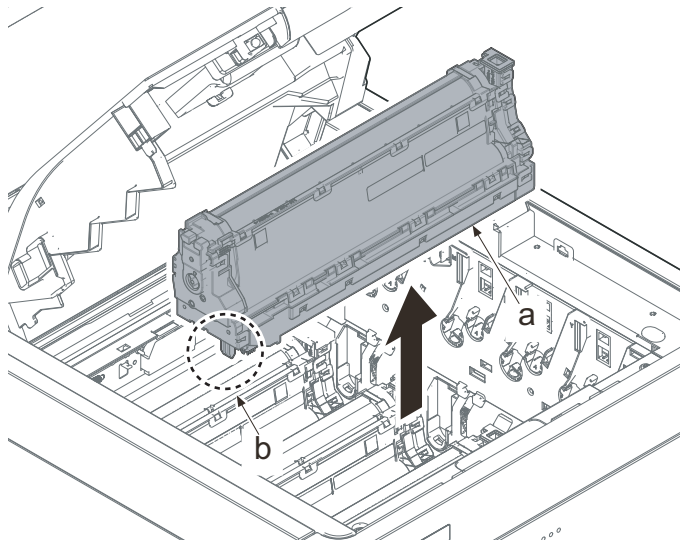
**IMPORTANT**

Hold the handles (b) on both sides when detaching the drum unit (a).



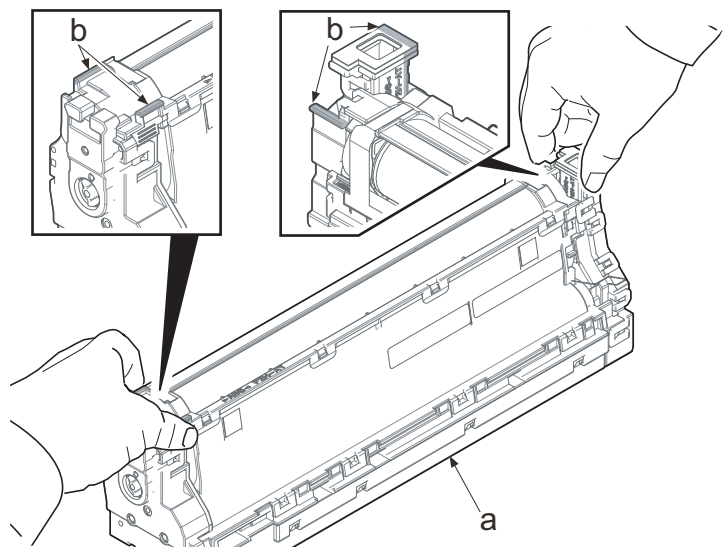
**Figure 4-184**

11. Detach the developer unit (K, M, C and Y)(a).



**Figure 4-185**

\*: When detaching the developer unit (a), hold both the left and right handles (b).



**Figure 4-186**

\*: Make sure not to touch the gears (a) in the drive section where there is grease.

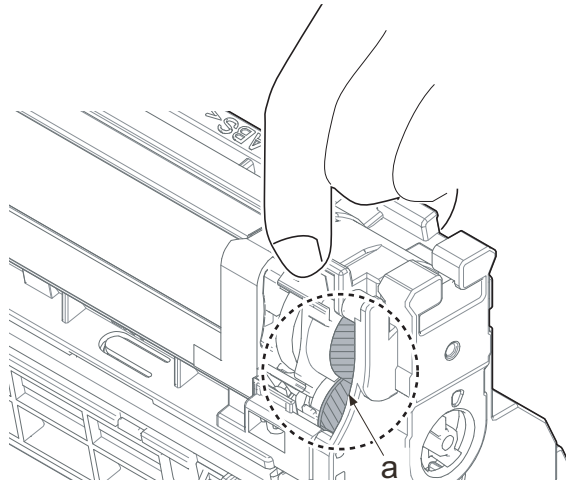


Figure 4-187

**IMPORTANT**

When attaching the developer unit (a), match the colors between the back side (b) of the developer unit and the right side (c) of the main unit.

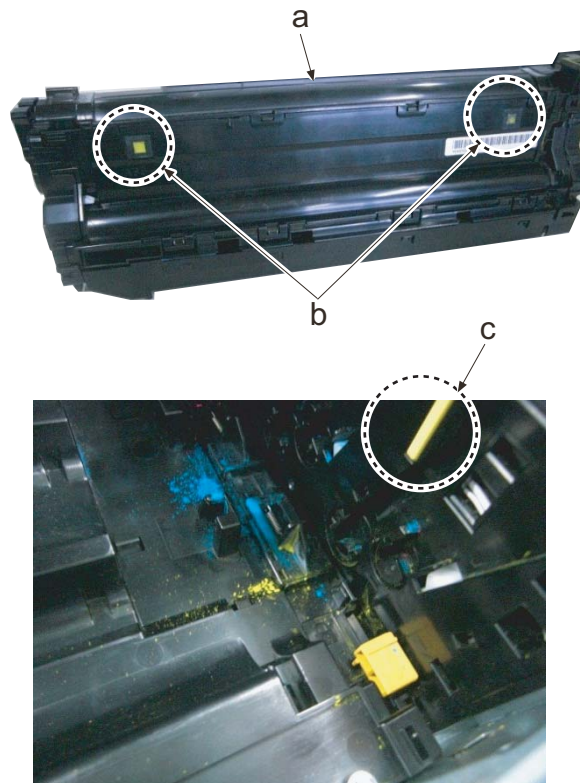


Figure 4-188

Take care not to touch the transfer high-voltage terminal (b) when attaching/detaching developer unit Y (a). It may cause the contact failure with deformation, etc.

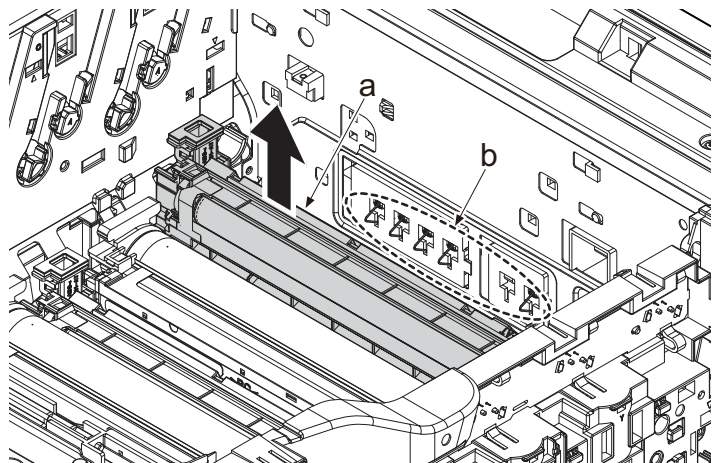


Figure 4-189



12. Pull the lower part of the opening toward the machine rear side and release the hook (a).
13. Remove the interface cover (b).

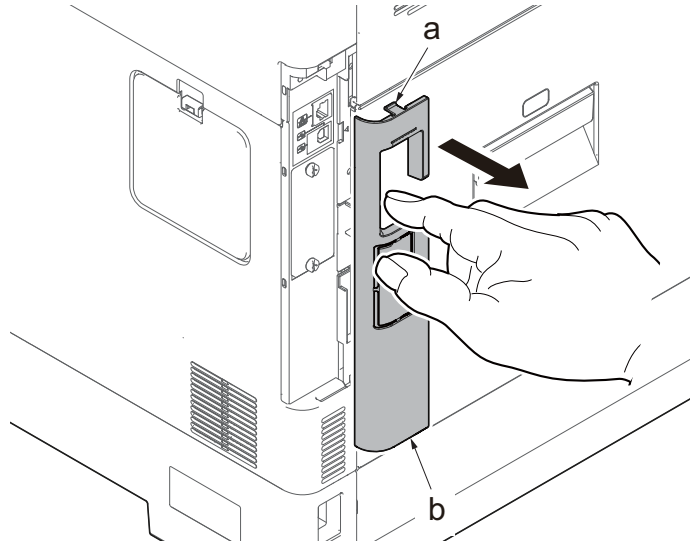


Figure 4-190

14. Remove the screw (a)(M3x8).
15. Slide the upper right cover (b) toward the machine rear side and detach it.

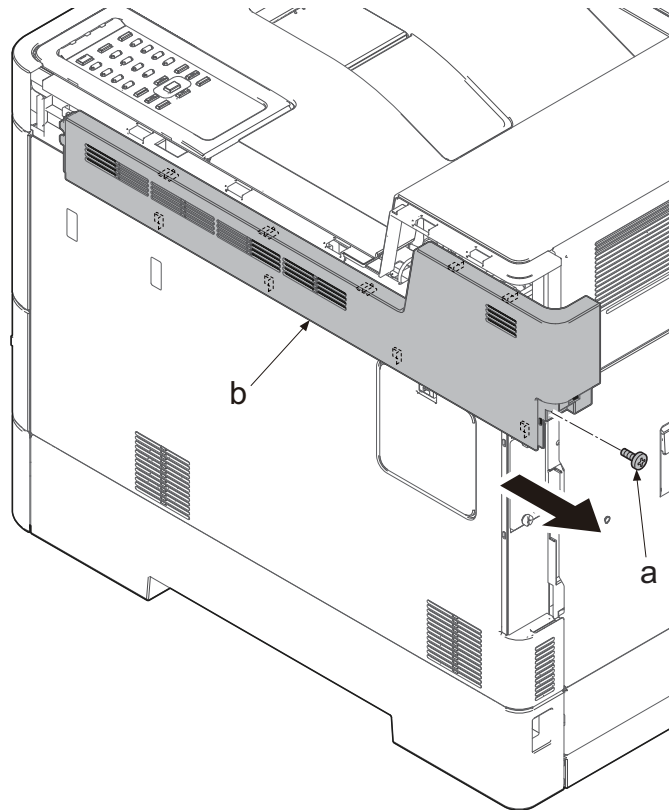
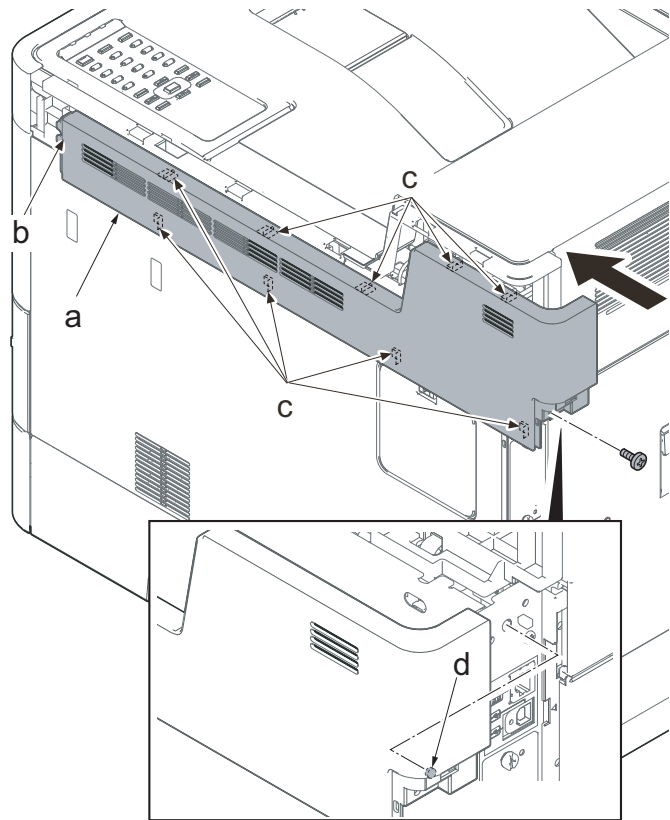


Figure 4-191

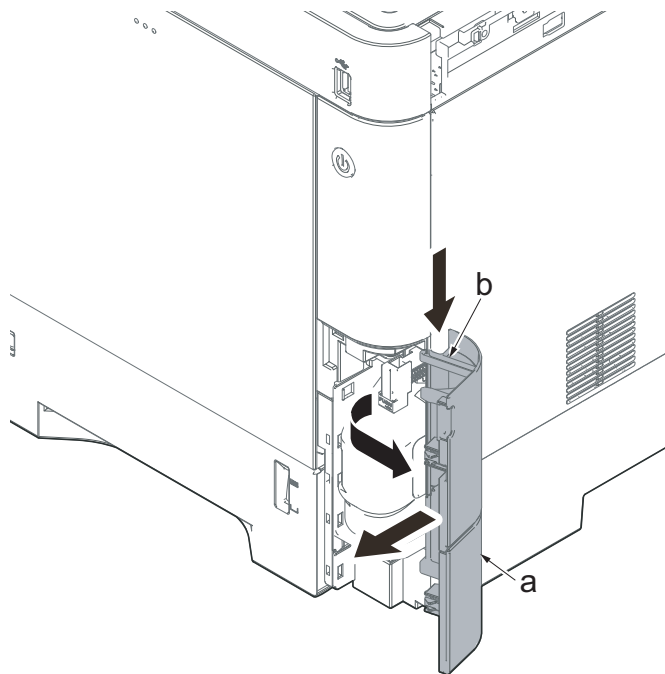
**IMPORTANT**

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten nine hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-192**

16. Open the waste toner cover (a).
17. Press the arm (b) down.
18. Remove the waste toner cover (a).



**Figure 4-193**

19. Push the lever (a) and open the memory cover (b).
20. Remove the memory cover (b).

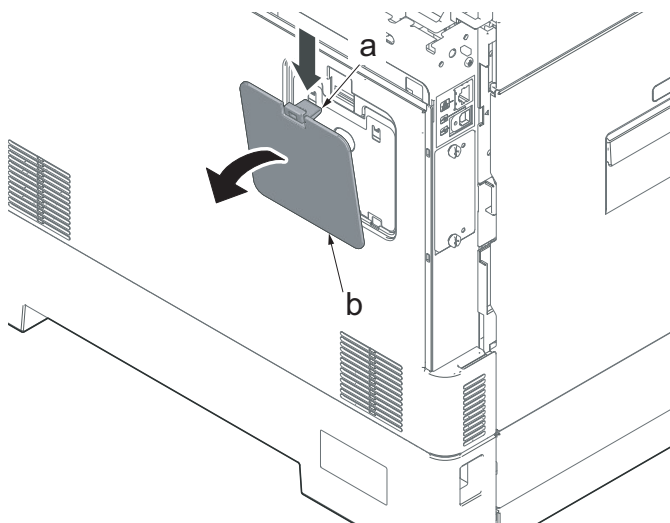


Figure 4-194

21. Pull up the shield lid (a) and pull it toward you to remove it.

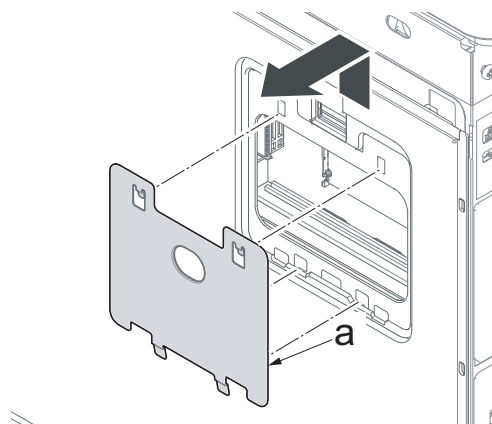


Figure 4-195

22. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

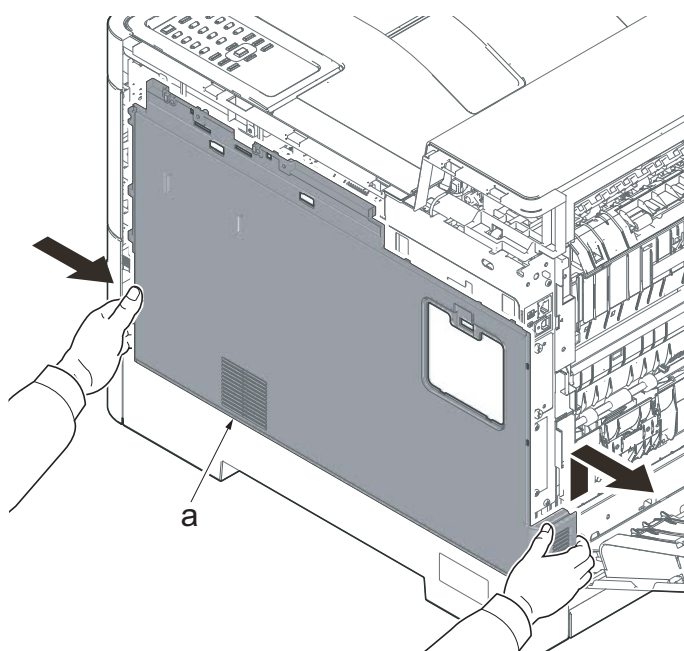
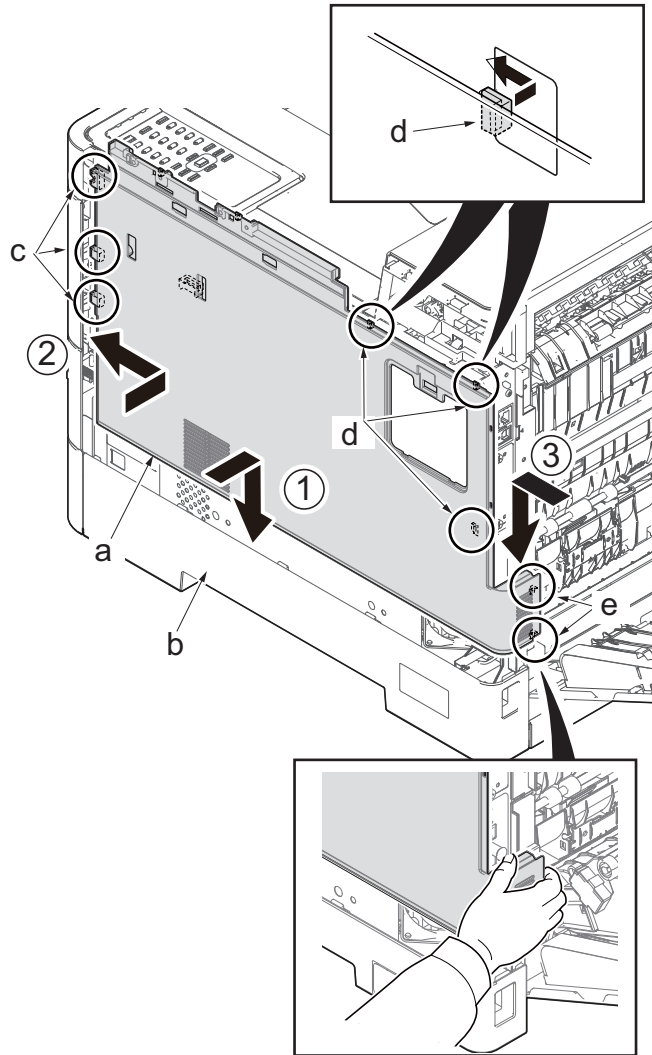


Figure 4-196



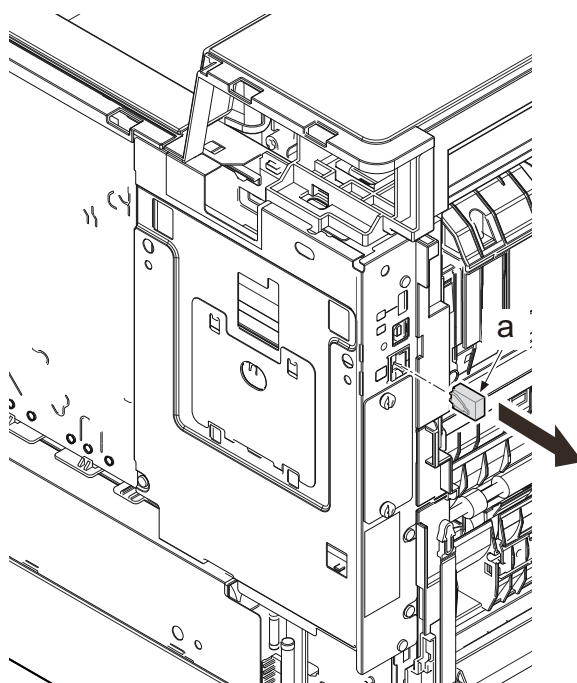
**IMPORTANT**

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side. Check if three hooks (d) at the machine rear side are surely fastened.



**Figure 4-197**

- 23. Remove the network connector cap (a).  
Remove the optional board, if installed.



**Figure 4-198**

24. Remove the optional board (b), if installed.

\*: Remove two screws (a)(M3x8) and remove the optional board.

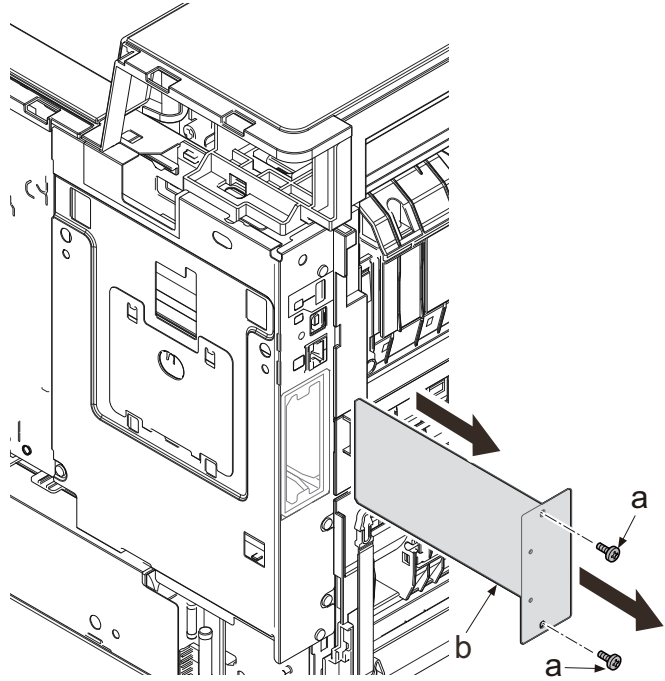


Figure 4-199

25. Remove four screws (a)(M3x8).

26. Remove the controller shield (d).

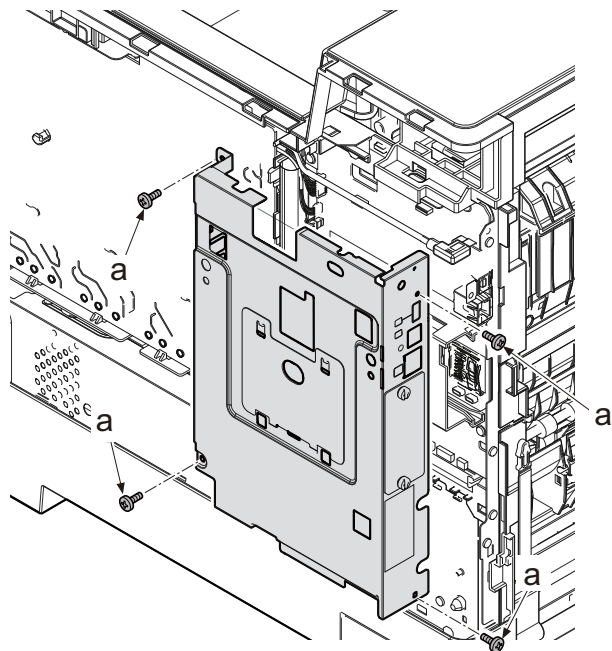


Figure 4-200

27. Remove the network connector (a) while sliding it toward the machine rear side and then remove the controller shield (b).

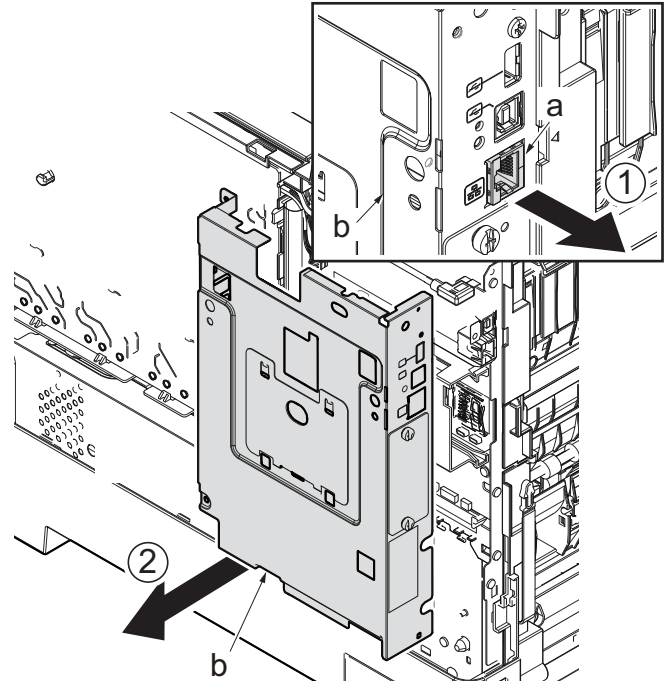


Figure 4-201

28. Open the wire alignment film (a) by releasing its square hole (b) from the hook (c).

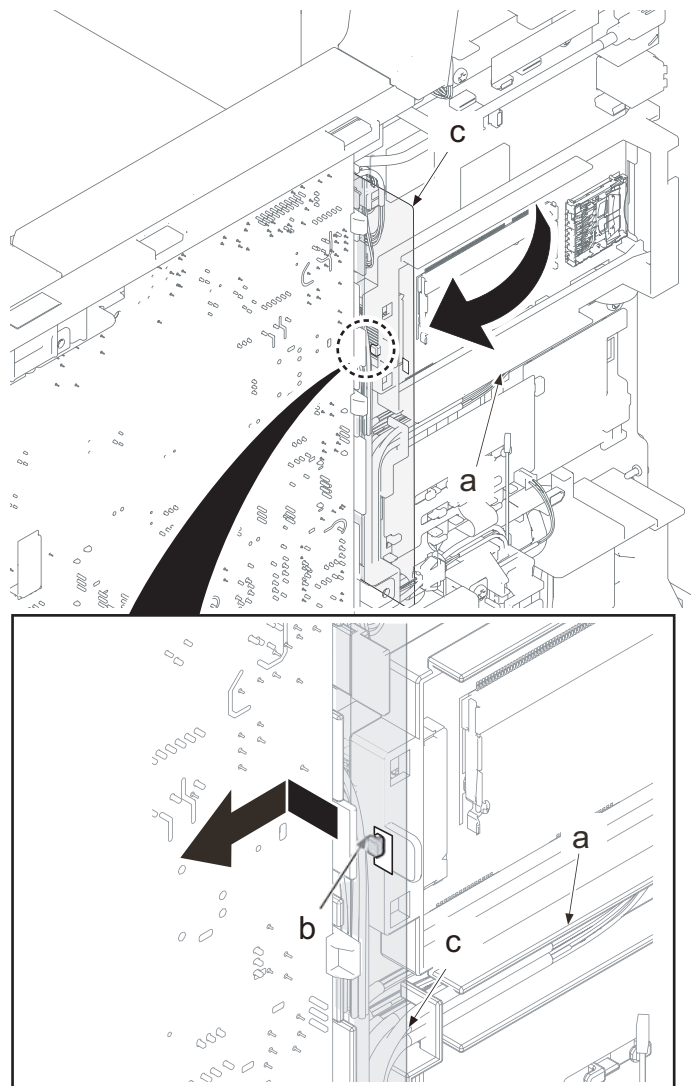


Figure 4-202

29. Release two hooks (b) of the PWB guides (a).

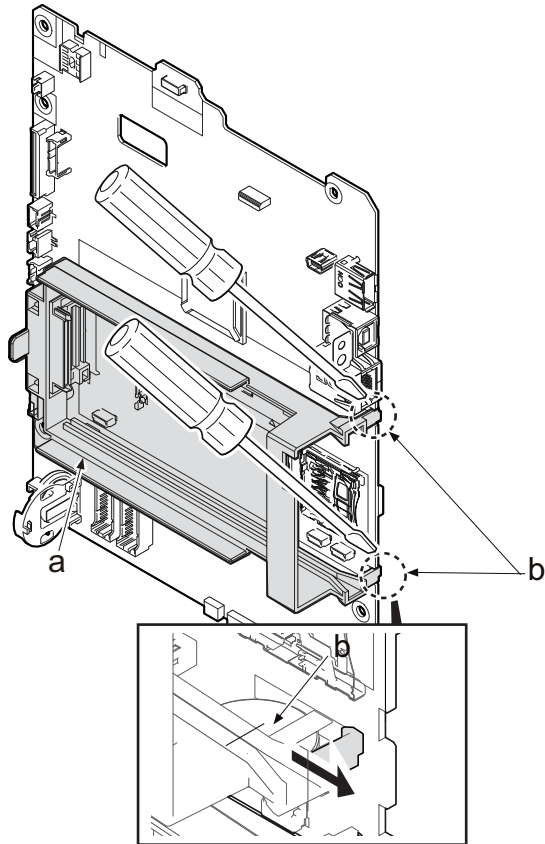


Figure 4-203

30. Slide the PWB guide (a) toward the machine rear side to release two hooks (b).

**IMPORTANT**

Check if two hooks (b) are fastened after reattaching the PWB guide (a).

The optional PWB connector can not be connected without hooking.

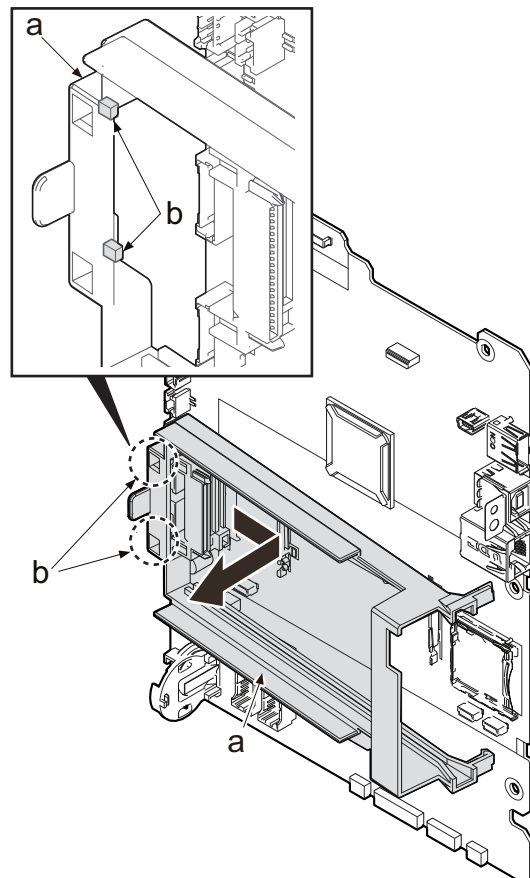


Figure 4-204

31. Disconnect two connectors (YC2016 and YC2017) from the main/engine PWB (a).
32. Release the wire (d) from the wire guide (c).

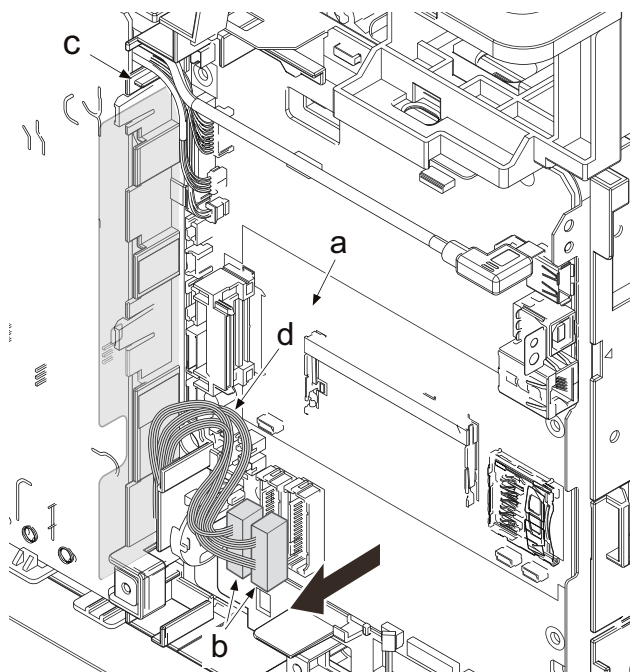


Figure 4-205

33. When removing the laser scanner unit (CY), open the wiring film (a) after removing the connector YC2017.

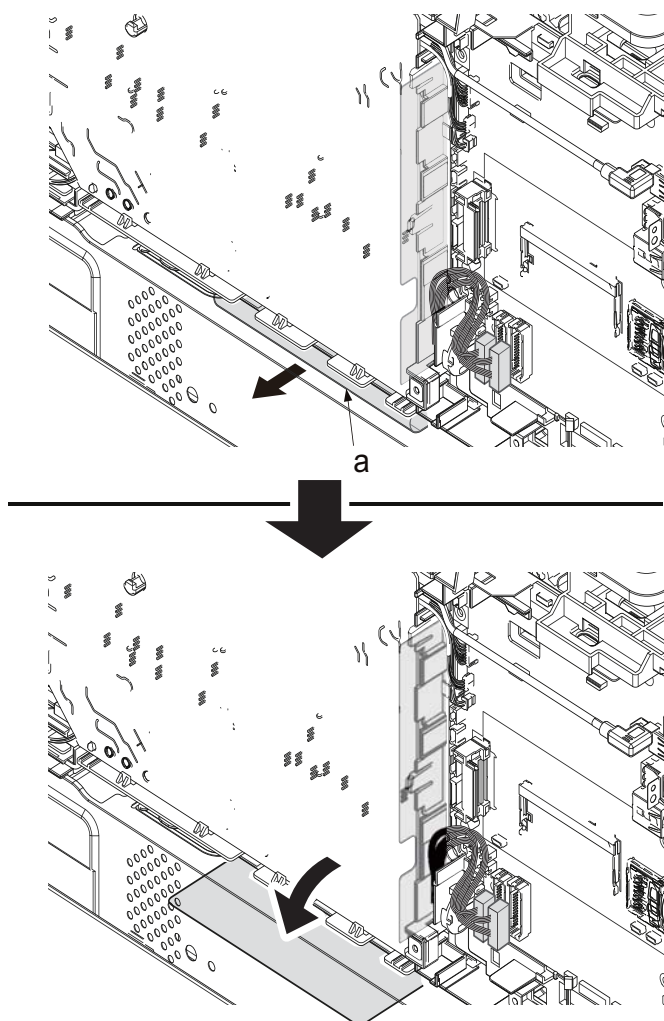


Figure 4-206

34. Pull the wire (a) into the main unit from the opening (b).

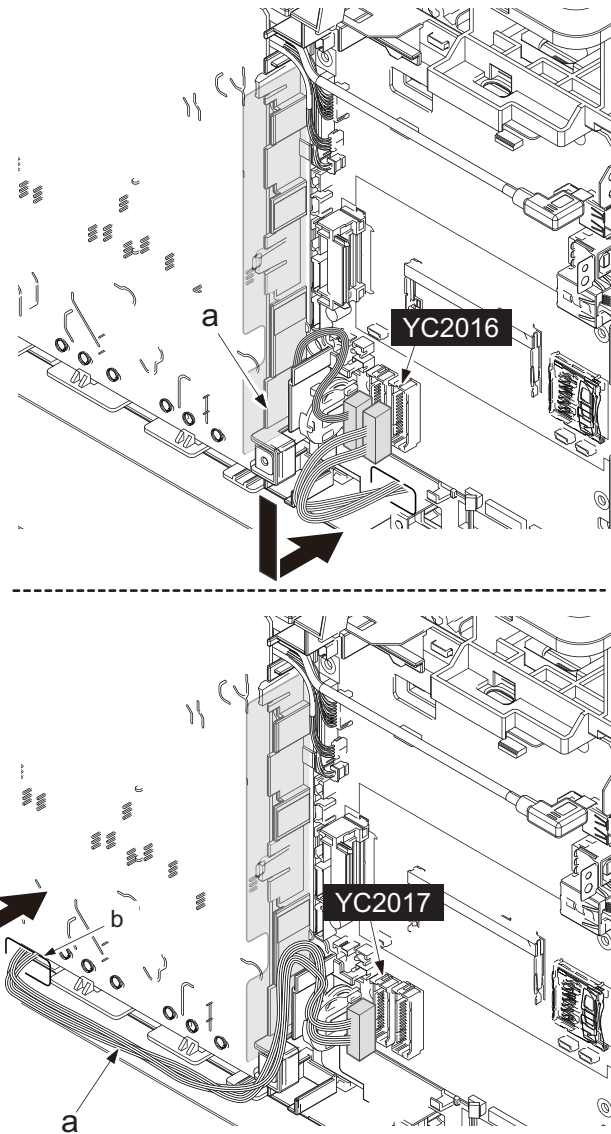


Figure 4-207

35. Remove the drum heater (K, M, C and Y), if installed.  
(for 40 ppm model only, to step 37 for 30/35 ppm model)

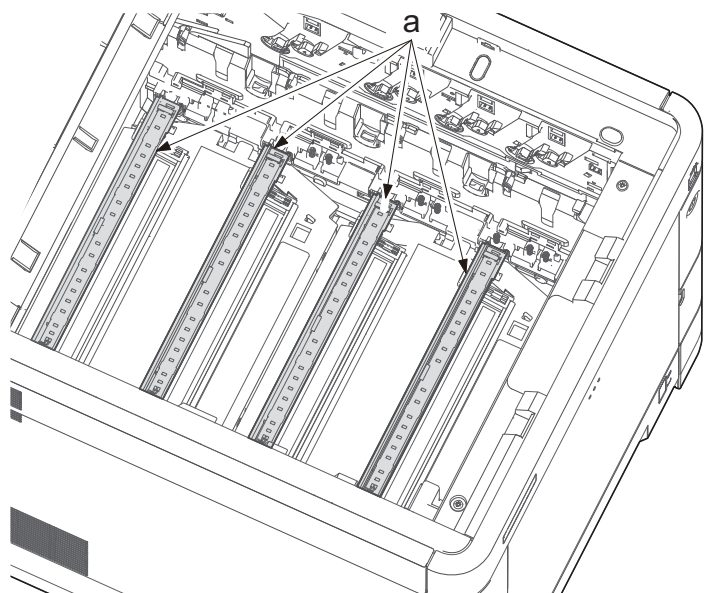


Figure 4-208



1. Disconnect the connector (b) of the drum relay PWB (a).

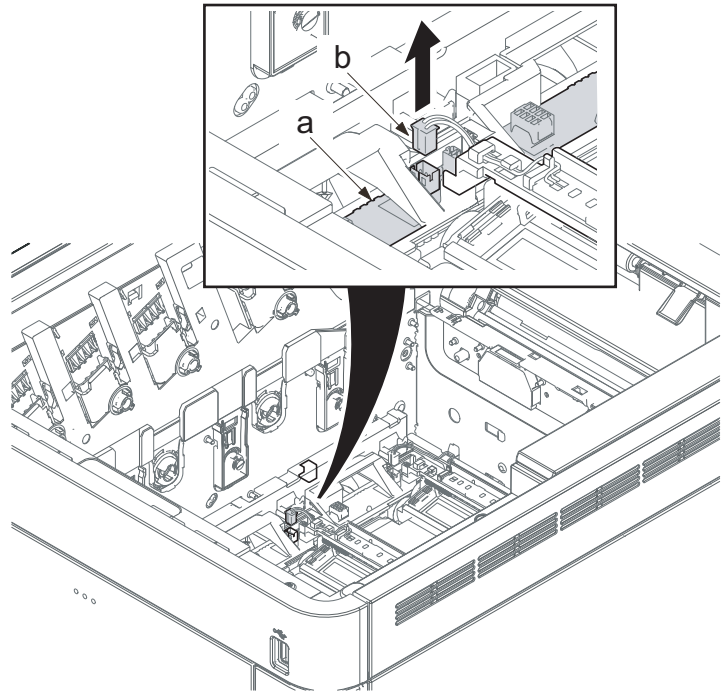


Figure 4-209

2. Lift up the machine left side of the drum heater (a) to remove the pin (b) from the boss.

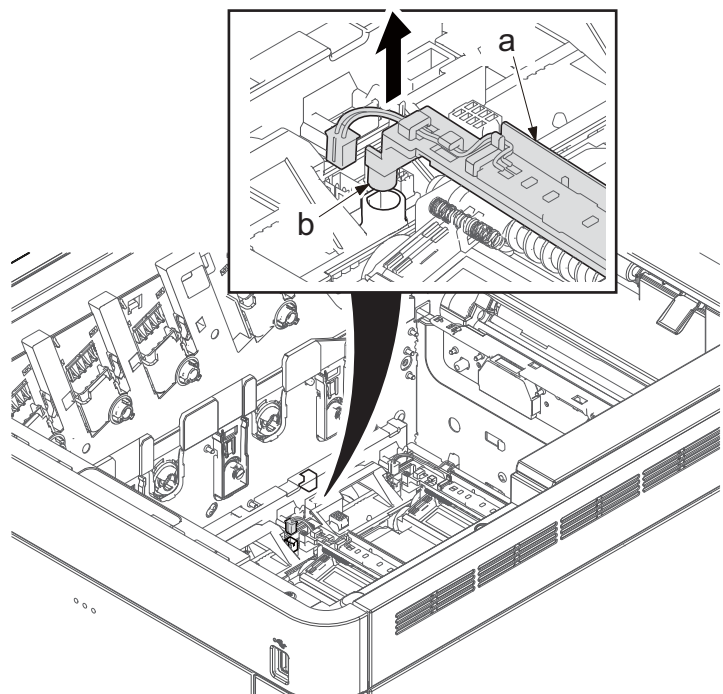


Figure 4-210

3. Slide the boss (b) at the machine right side of the drum heater (a) to remove it.

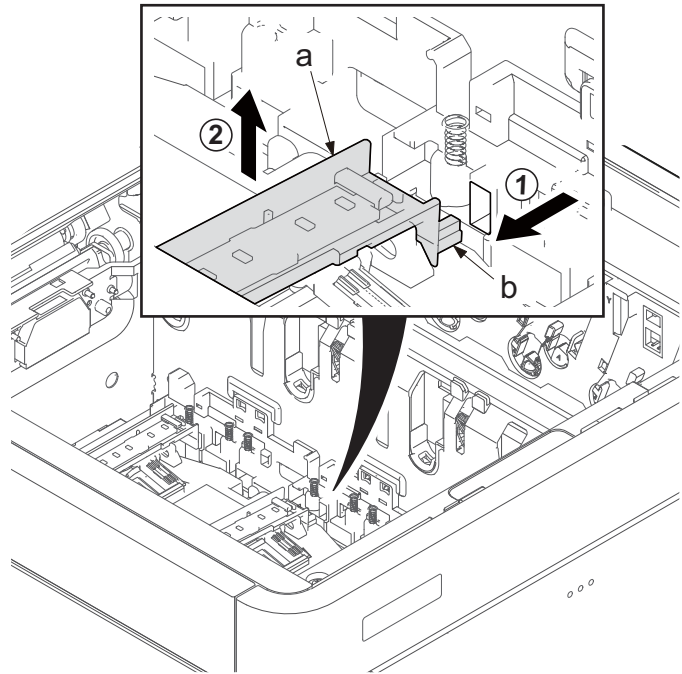


Figure 4-211

\* :Like this, remove four drum heaters (a).

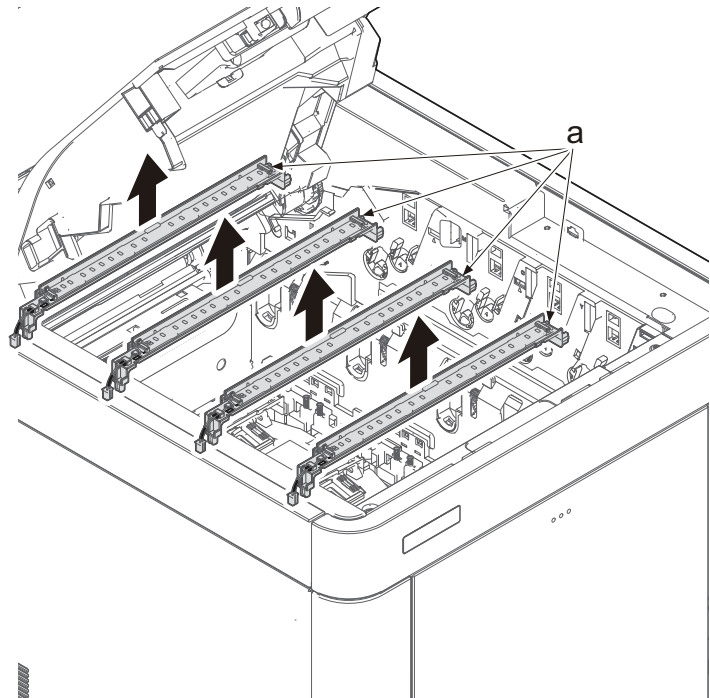


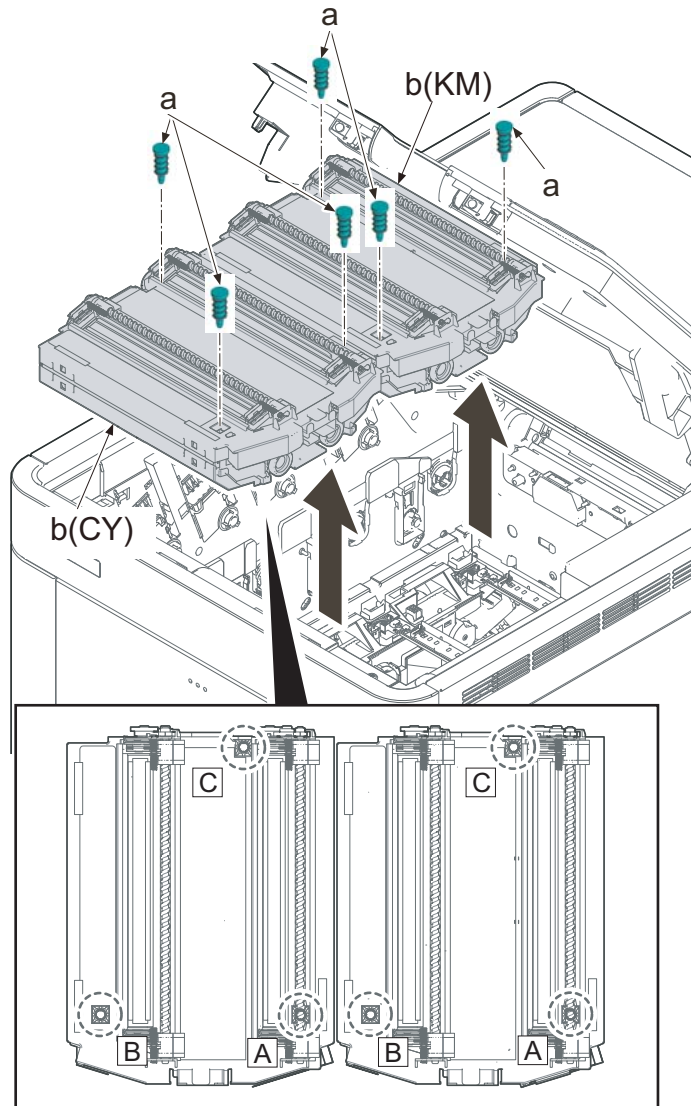
Figure 4-212



36. Remove each set of three pins (a).
37. Detach the LSUs (b) for KM and CY.
  - \*: Pull out the wire from the opening and remove it.
38. Check the laser scanner unit and clean or replace it if necessary.
39. Reattach the parts in the original position.
40. Execute the following after replacing with the new laser scanner unit.
  - System Menu
  - [Adjustment/Maintenance]
  - 1. Executes Color adjustment (Color Calibration).
  - 2. Execute the Color Registration

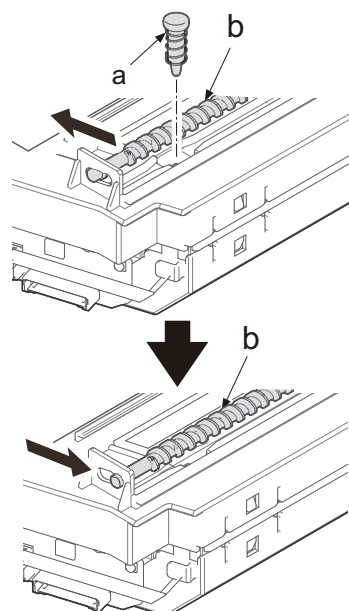
**IMPORTANT**

Secure the pins in order of A, B and C when reattaching the LSU.



**Figure 4-213**

Make sure to return the spiral (b) to the lock position after relocating it to reattach the pin (a) that is in the position A.



**Figure 4-214**

\*: Make sure not to touch the APC PWB (b) when holding the LSU (a).

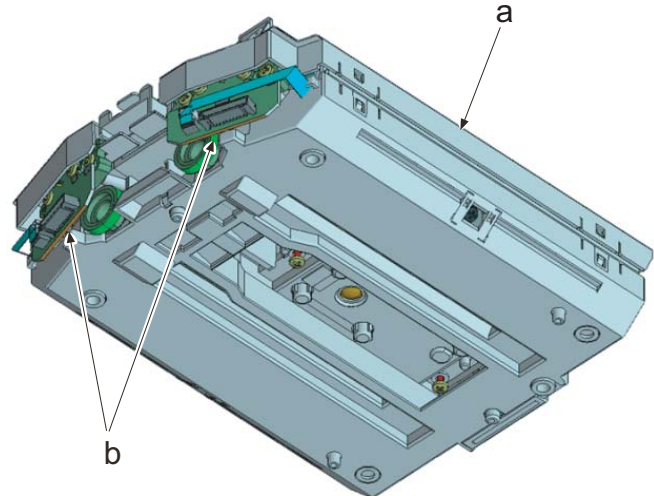


Figure 4-215

**IMPORTANT**  
Pull the wire (b) out from the aperture (c) of the frame when reattaching the LSU (a).  
There is an engraving (d) of an arrow indicating the opening position in the frame.

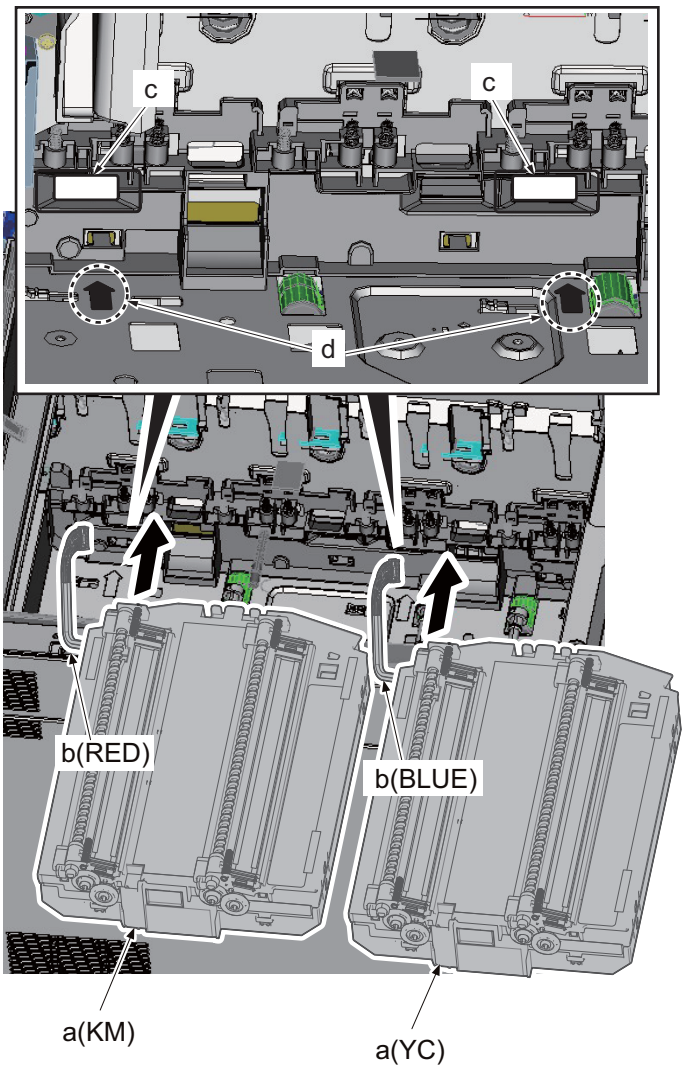


Figure 4-216

Be careful not to locate the wire saddle (b) on the pin protrusion (c) before reattaching the LSU (a).

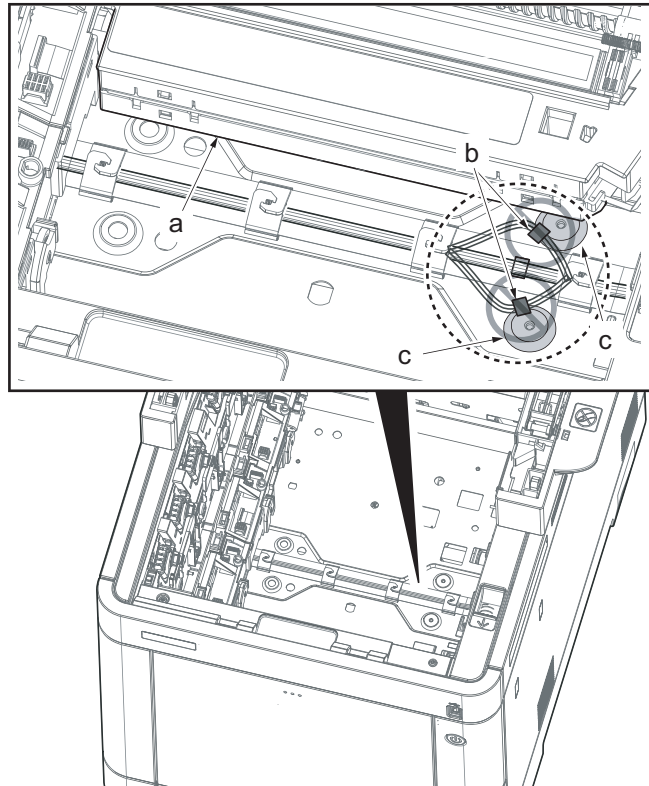


Figure 4-217

## (2) MP tray paper feed section

### (2-1) Detaching and reattaching the MP paper feed roller

1. Pull out the cassette (a).

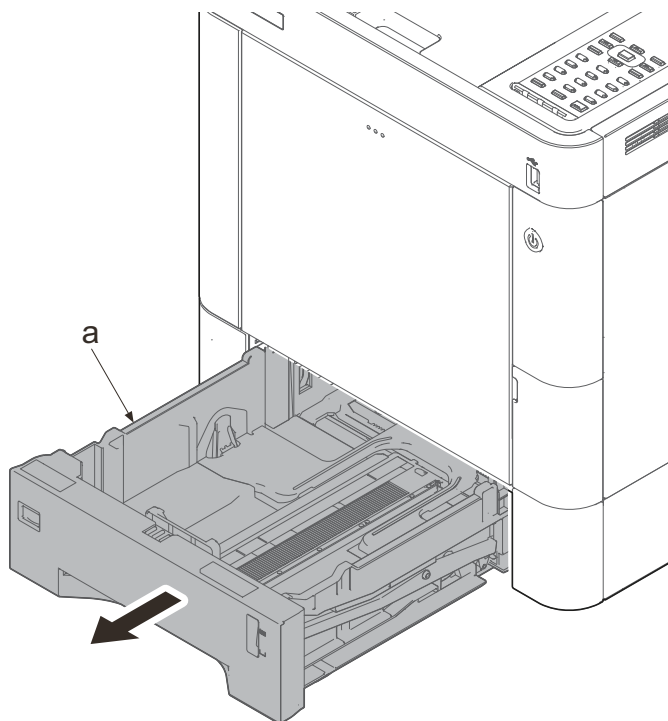


Figure 4-218

2. Lower the release lever (a).
3. Open the lower MP paper conveying unit (b).

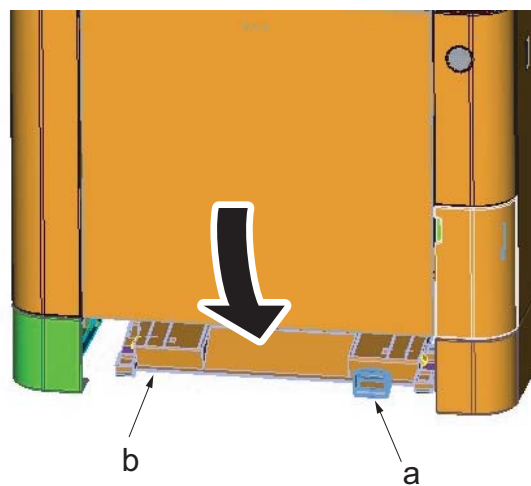


Figure 4-219

- 4. Pull the lever (a).
- 5. Open the top tray (b).

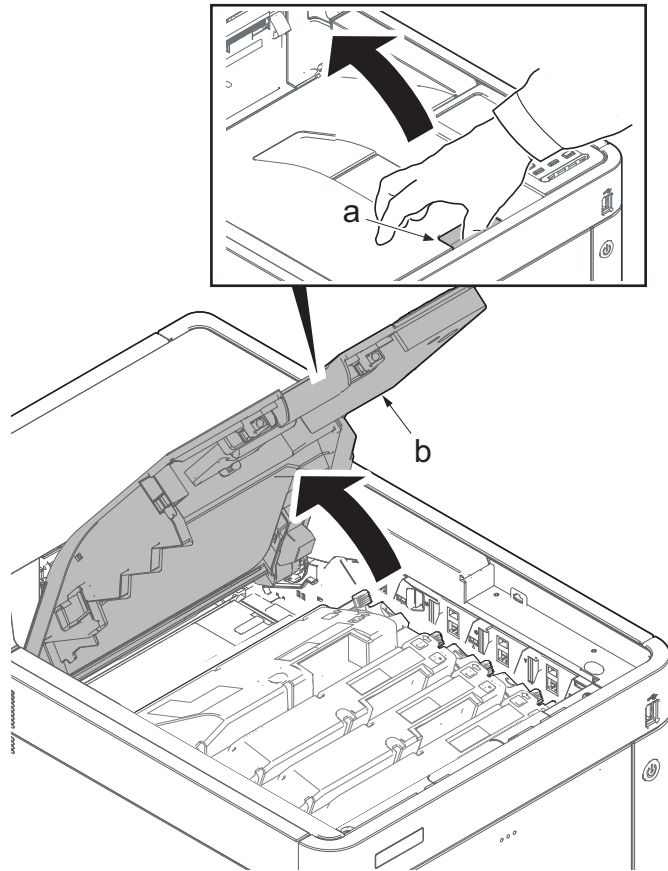


Figure 4-220

- 6. Open the MP tray (a).
- 7. Remove two screws (b)(M3x8).
- 8. Open the waste toner cover (c).

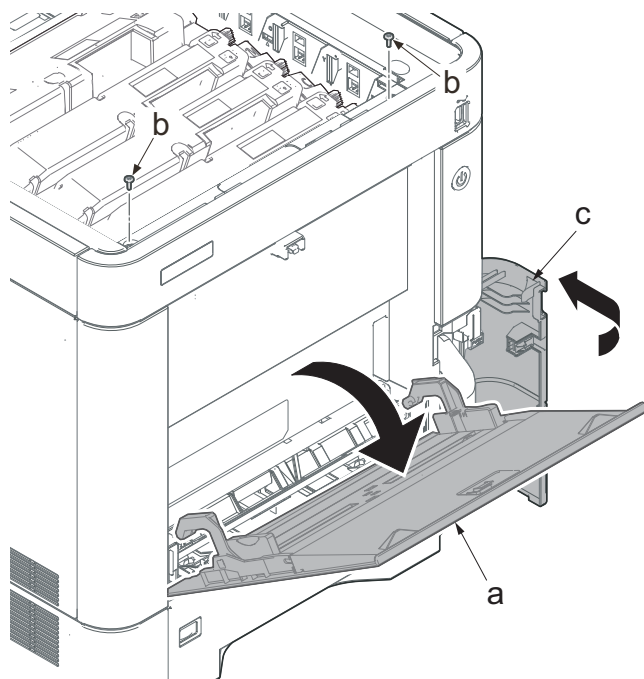


Figure 4-221

9. Slightly lift up the front cover (a) to release the boss (b).
10. Tilt the front cover (a) toward the machine front side.
11. Then, remove the front cover (a) by lifting it up.

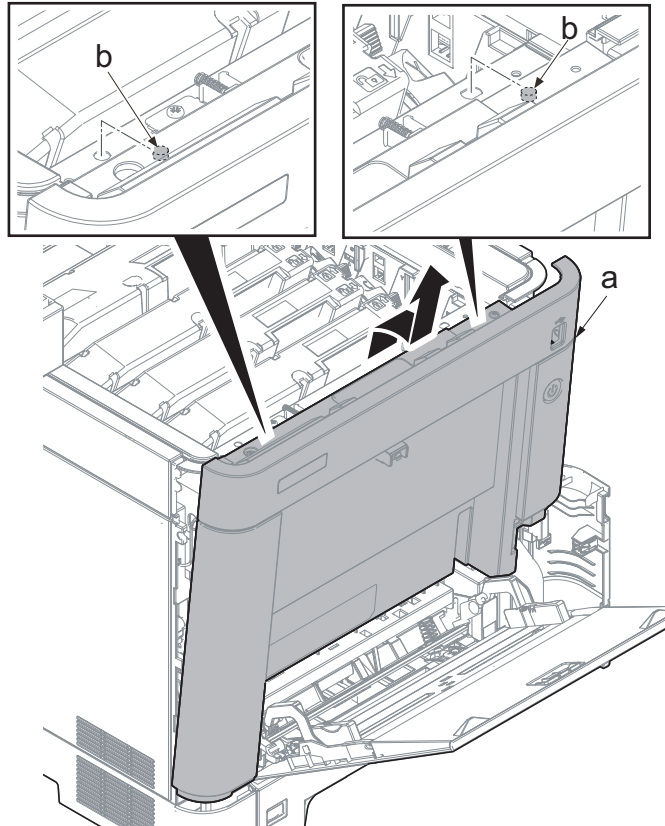


Figure 4-222

**IMPORTANT**

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, "cover open" will be displayed.

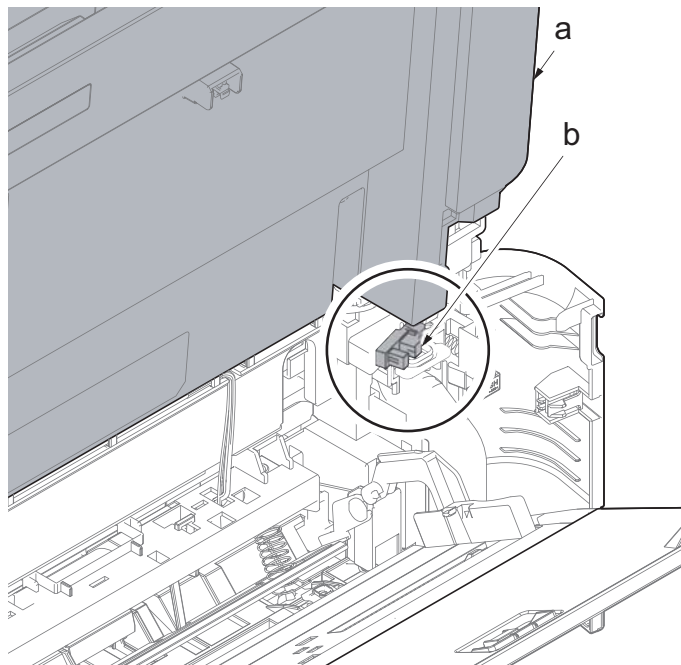


Figure 4-223



12. Open the MP tray (a) slightly.
13. Lift up the MP tray cover (b) and release two hooks (c).

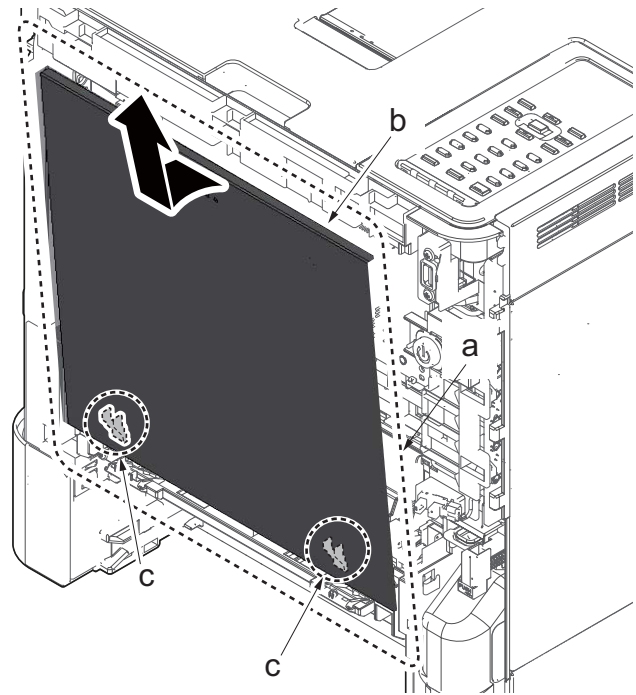


Figure 4-224

14. Fully open the MP tray (a).
15. Slide the arm (b) to the machine rear side and lift it up to remove.

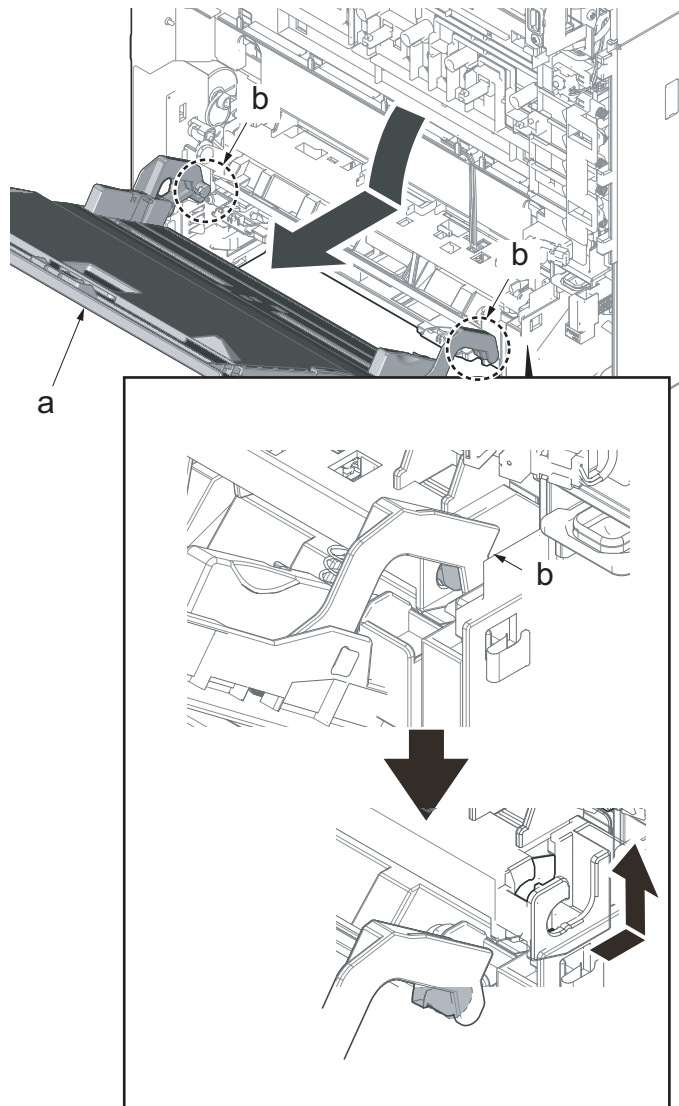


Figure 4-225

16. Remove two screws (a)(M3x8).
17. Detach the lower MP paper feed unit (b).

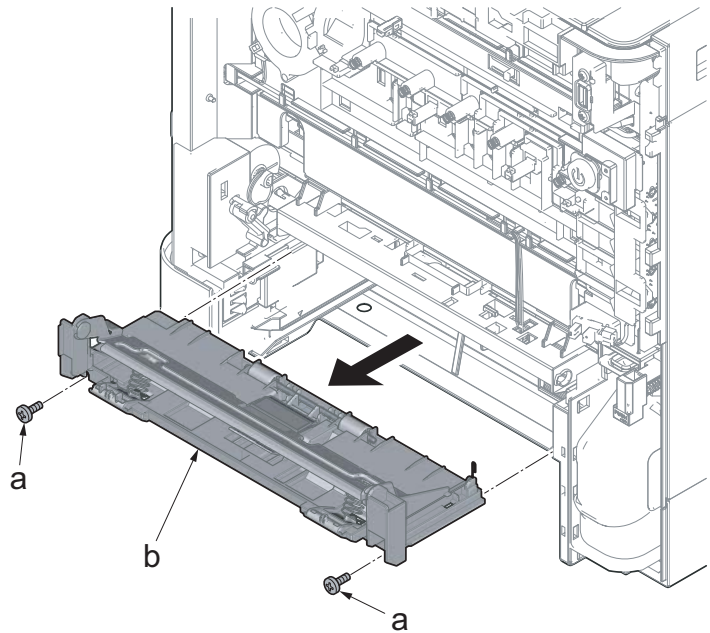


Figure 4-226

**IMPORTANT**

Lower the MP lift plate (b) so that the lever (c) is on it when reattaching the lower MP paper feed unit (a).

\*: The paper is not fed because the MP lift plate (b) cannot ascend and descend when it is not in the correct position.

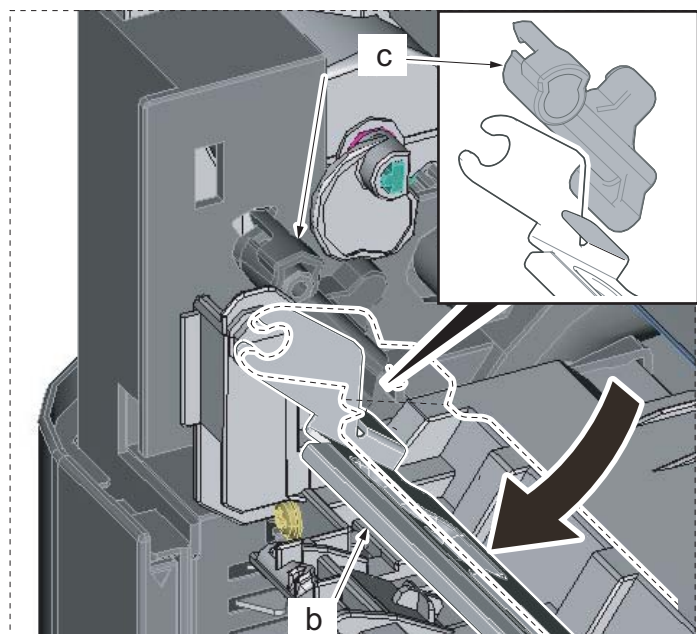


Figure 4-227



18. Pull the hook (a) toward the machine front side.
19. Slide the MP paper feed shaft (b).
20. Remove the MP paper feed roller (c).

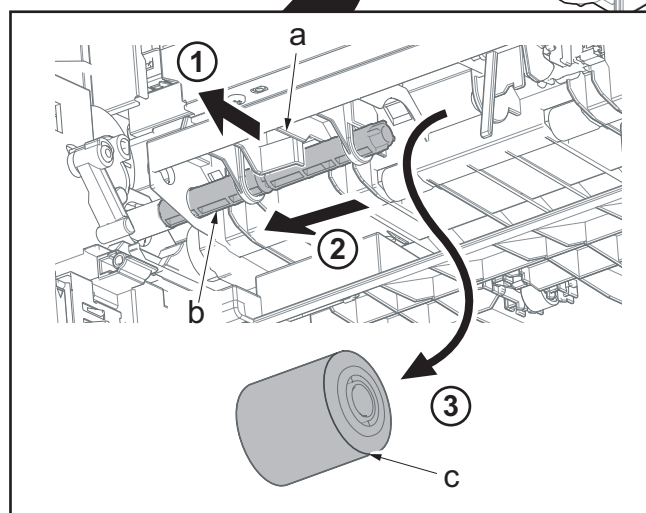
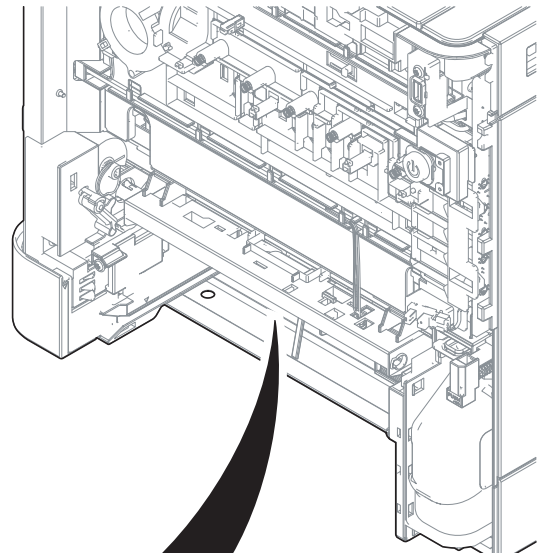


Figure 4-228

**IMPORTANT**  
When reattaching the MP paper feed roller (a),  
be aware of the attachment direction.

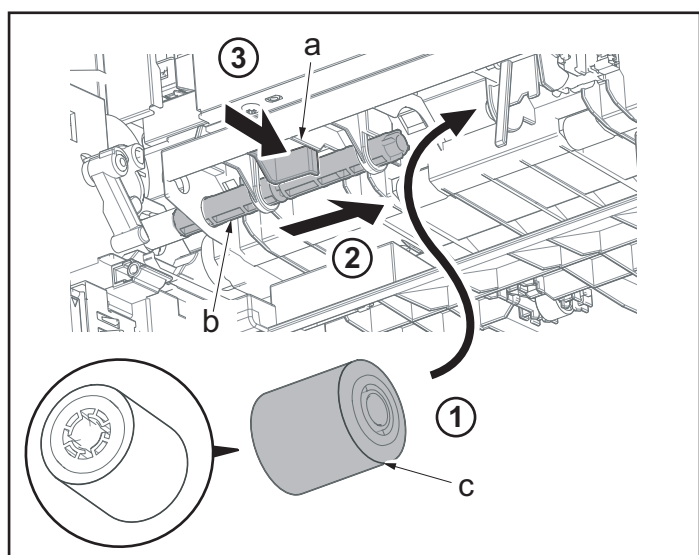


Figure 4-229

## (2-2) Detaching and reattaching the MP tray paper conveying unit

1. Detach the new MP feed roller.
2. Pull the hook (b) toward the machine front side.
3. Slide the MP paper feed shaft (c).
4. Pull the MP paper feed shaft (c) out from the drive joint (d).

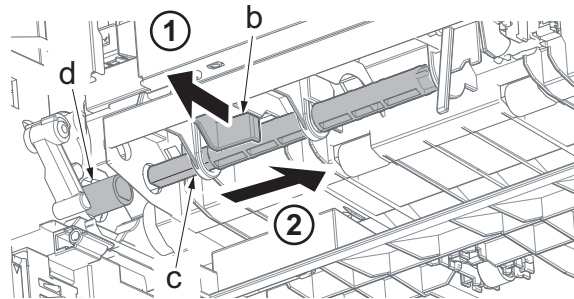


Figure 4-230

5. Disconnect the connector (b) (YC6) from the engine relay PWB (a).
6. Release the wire from eight hooks (c).

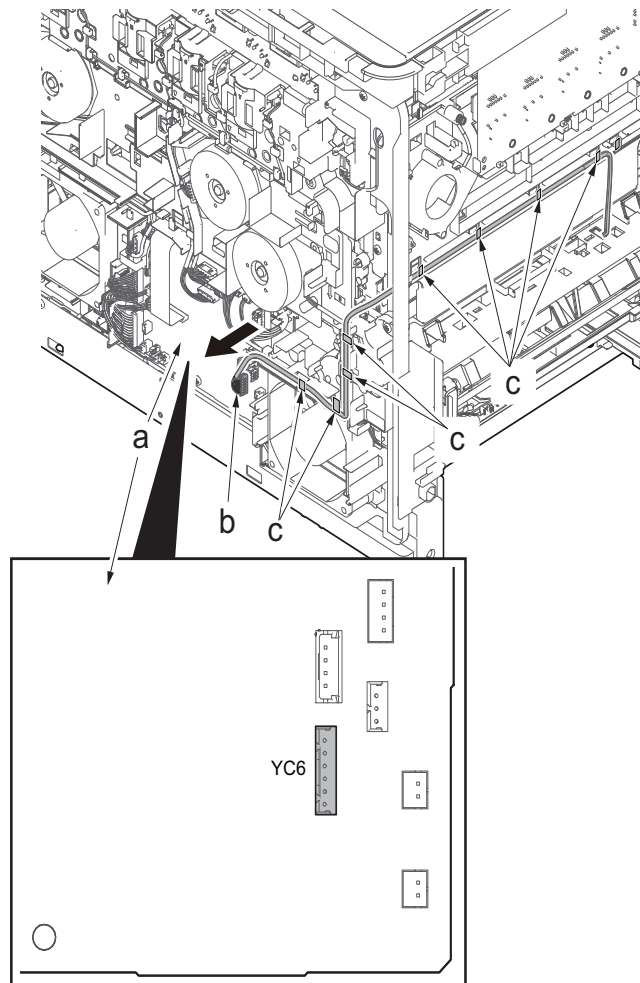


Figure 4-231

7. Remove two screws (a)(M3x8).
8. Detach the MP conveying unit (b) by pulling it toward the machine front side.

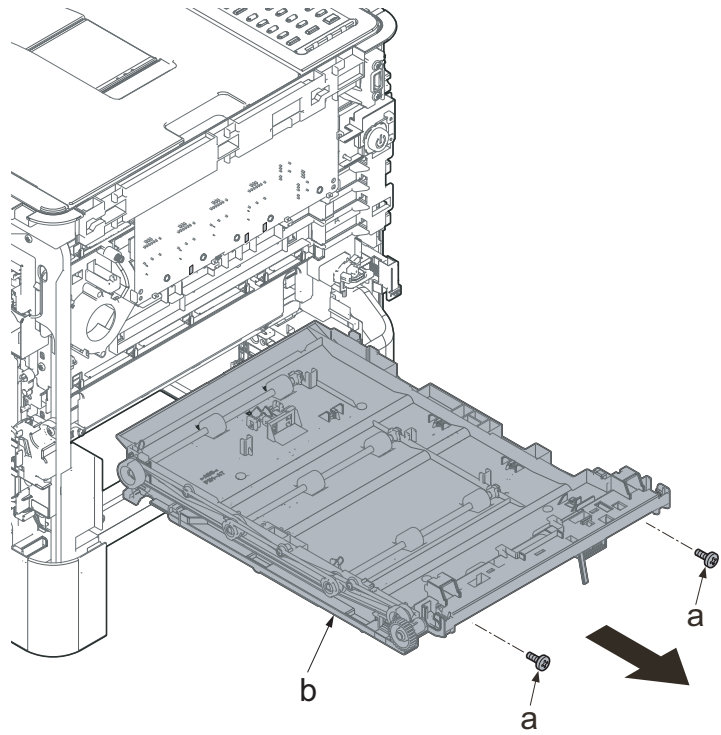


Figure 4-232

**IMPORTANT**

Check if the wire is fastened to the hook (b) before reattaching the MP conveying unit (a).

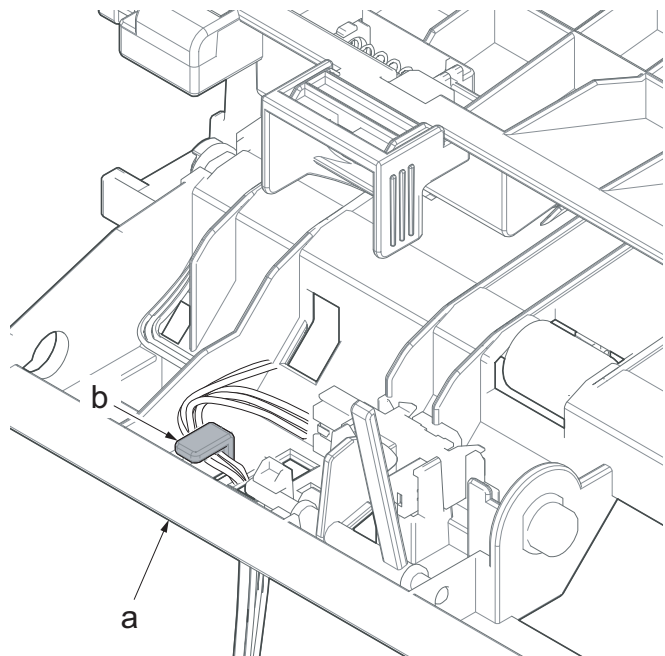


Figure 4-233

Lower the actuator (b) of the paper sensor  
before reattaching the MP conveying unit (a).

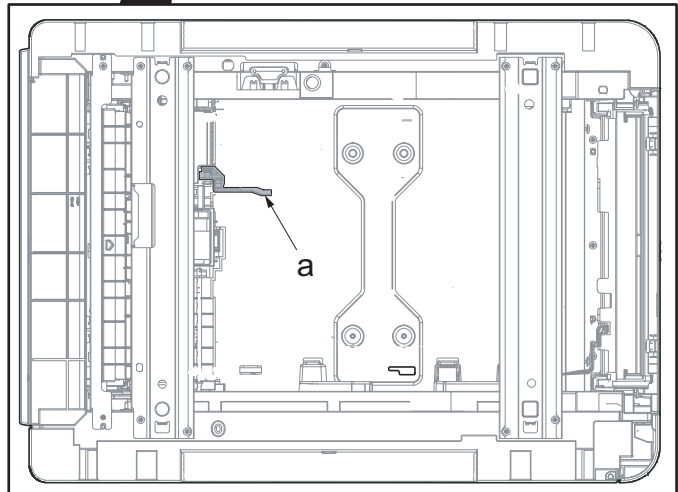
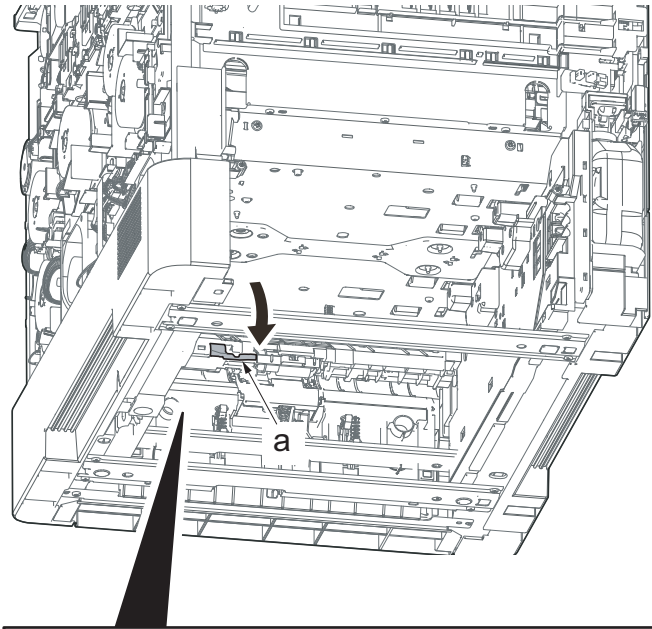


Figure 4-234

First apply the positioning (c) to the cutout at the left and right side and then secure the screw.

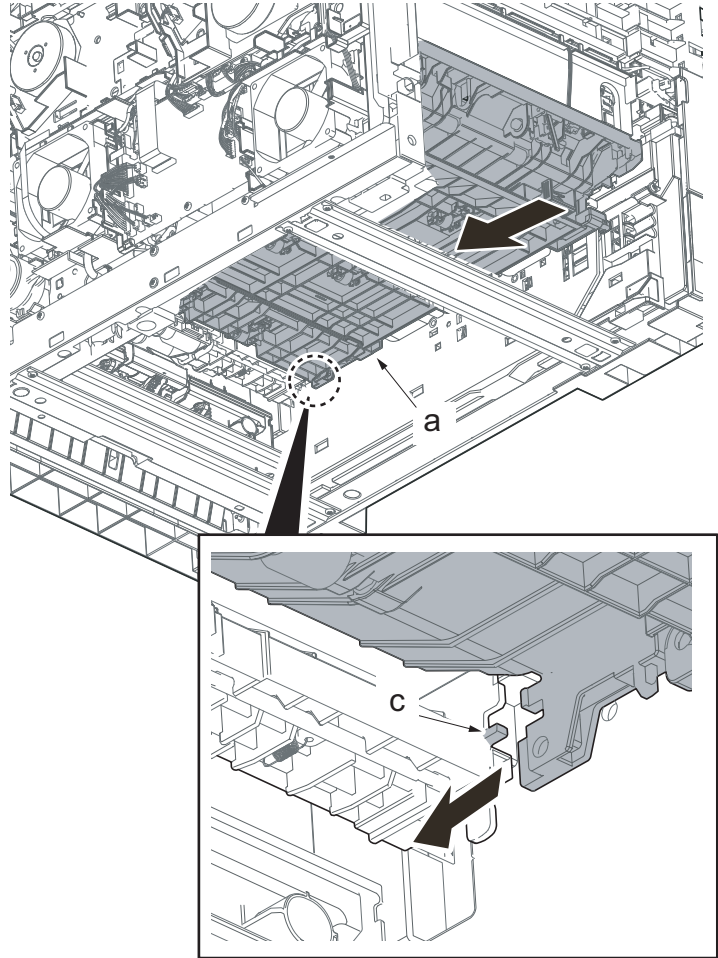


Figure 4-235

### (3) Drum section

#### (3-1) Detaching and reattaching the main charger roller unit

1. Detach the drum unit (a).
2. Pull the hook (c) of the main charger roller unit (b) in the drum unit (a) to release it.
3. Push the main charger roller unit (b) from the opposite side of the opening.

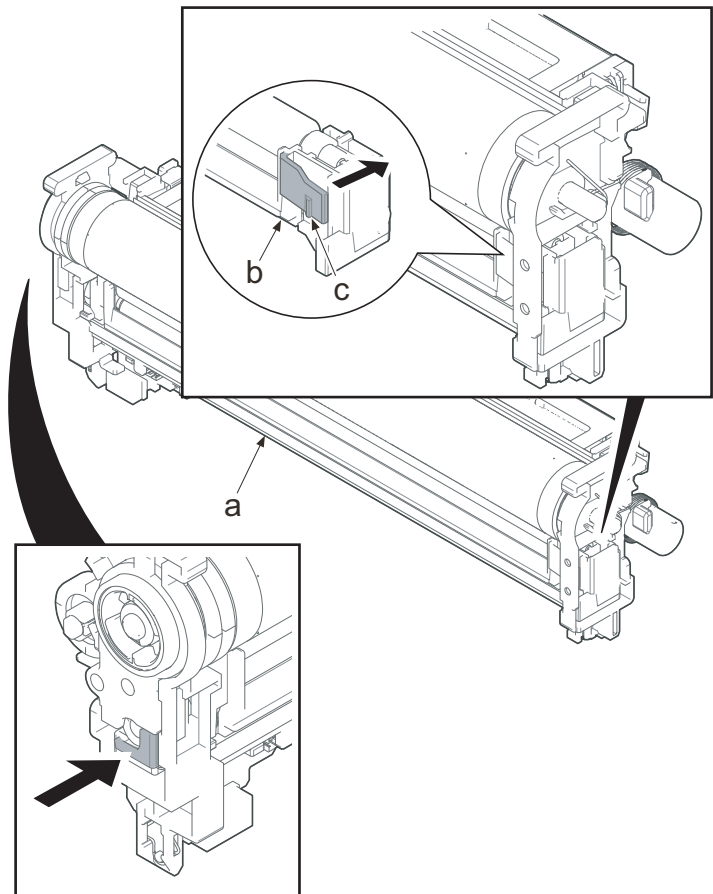


Figure 4-236

4. Pull the main charger roller unit (b) by holding the handle (a).

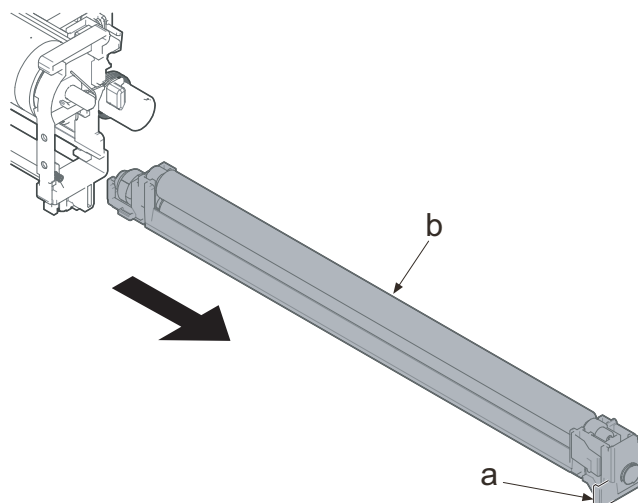


Figure 4-237

## (4) Exit section

### (4-1) Detaching and reattaching the exit unit

#### 30 ppm model

1. Pull the lower part of the opening toward the machine rear side and release the hook (a).
2. Remove the interface cover (b).

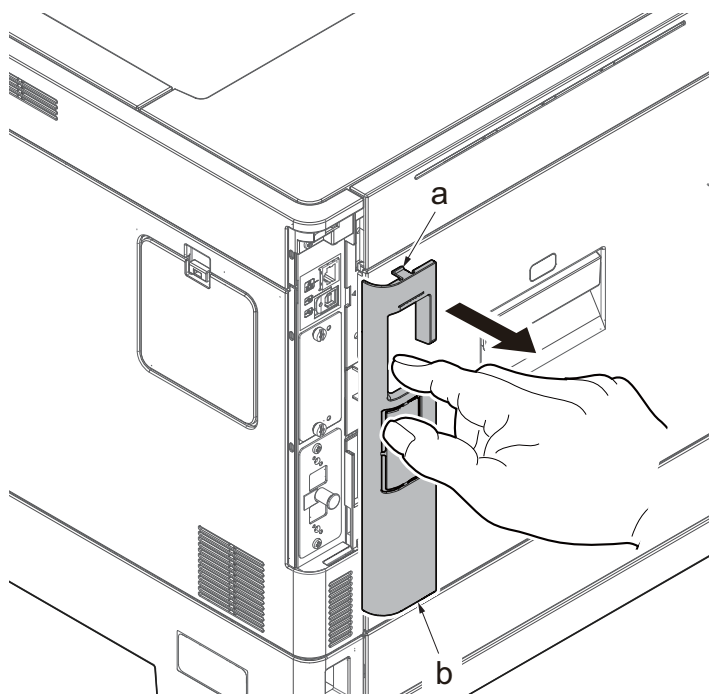


Figure 4-238

3. Remove the screw (a)(M3x8).
4. Slide the upper right cover (b) toward the machine rear side and detach it.

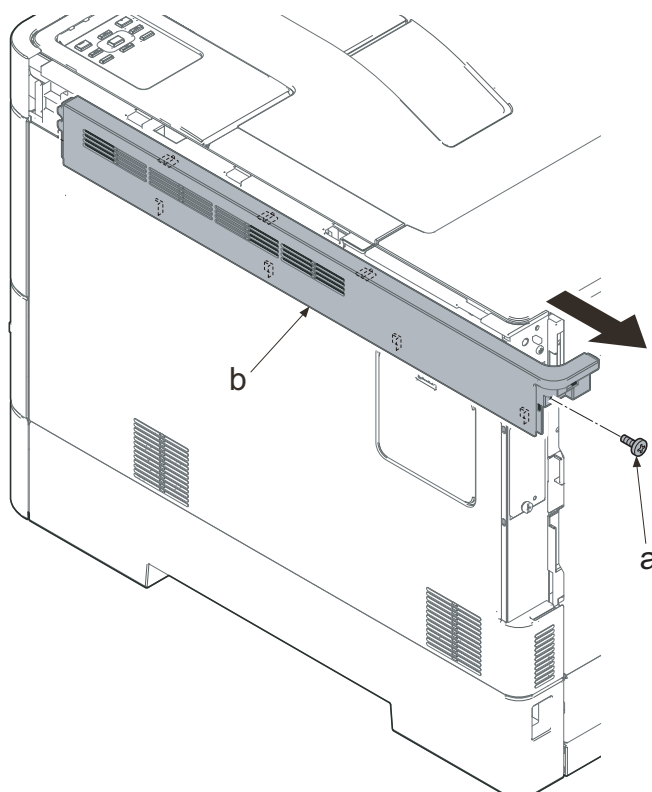
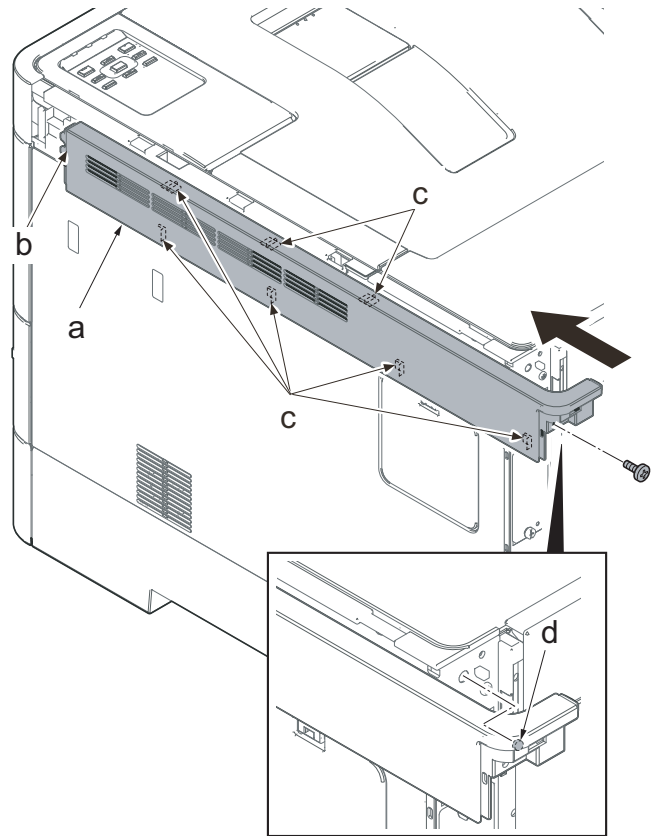


Figure 4-239

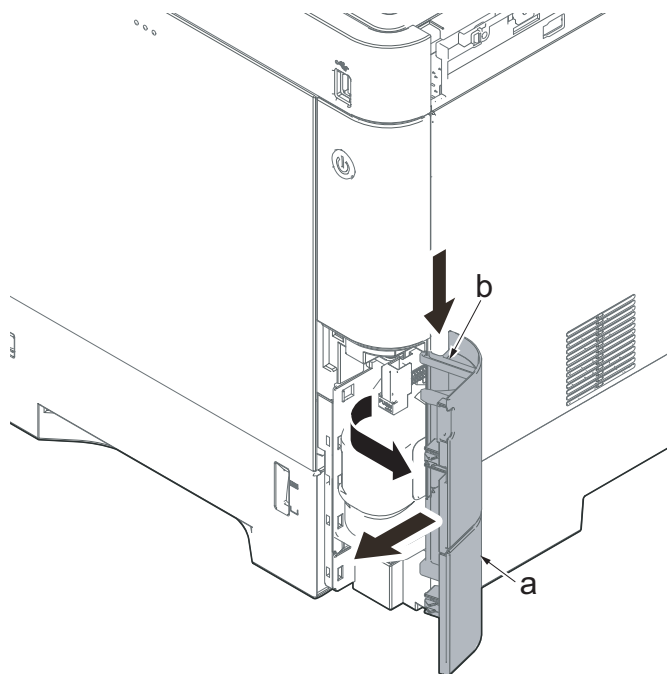
**IMPORTANT**

When reattaching the upper right cover (a), insert the hook (b) to the machine front side, and then fasten seven hooks (c) by sliding it toward the machine front side and insert the positioning projection (d) into the hole.



**Figure 4-240**

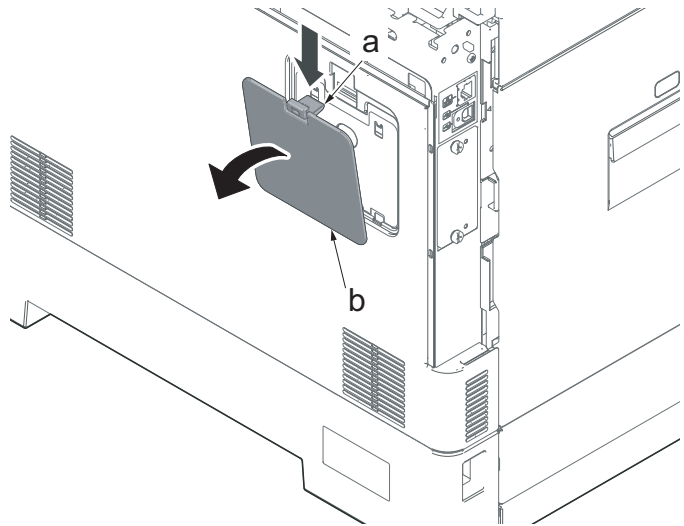
5. Open the waste toner cover (a).
6. Press the arm (b) down.
7. Remove the waste toner cover (a).



**Figure 4-241**

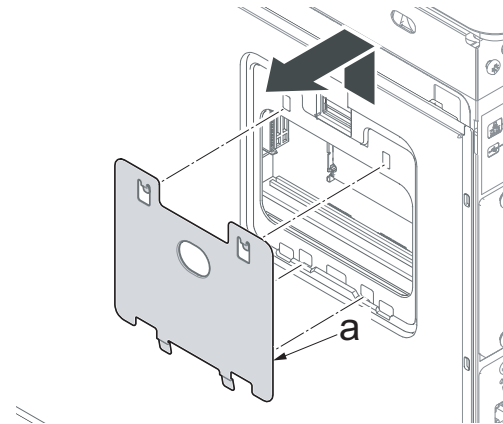


- 8. Push the lever (a) and open the memory cover (b).
- 9. Remove the memory cover (b).



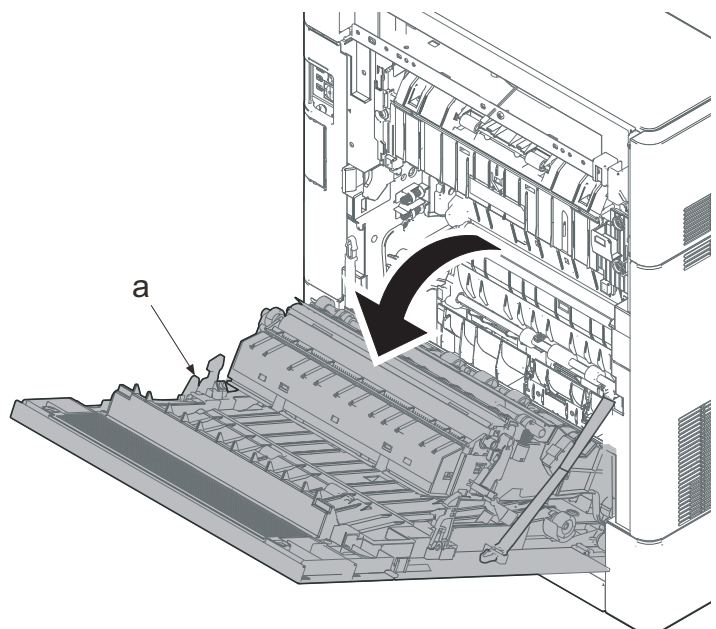
**Figure 4-242**

- 10. Pull up the shield lid (a) and pull it toward you to remove it.



**Figure 4-243**

- 11. Open the rear cover (a).



**Figure 4-244**

12. Push the machine front side of the middle right cover (a) toward the machine rear side and then lift up its machine rear side to detach it.

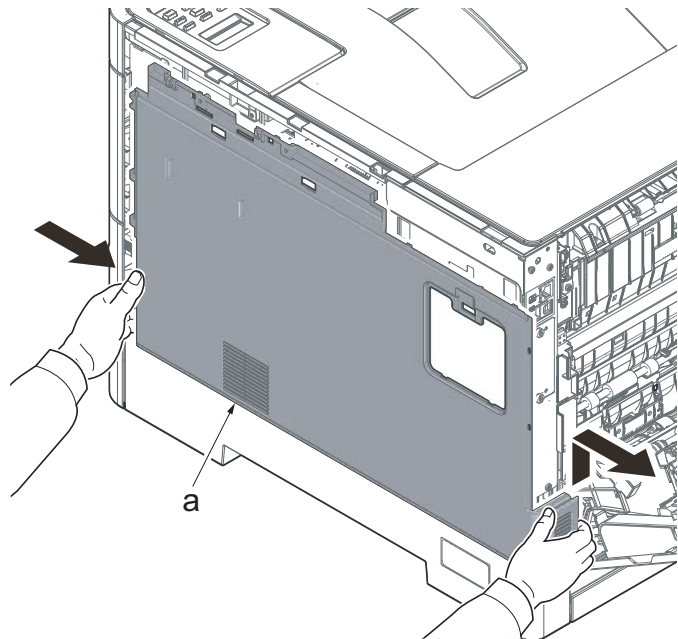


Figure 4-245

**IMPORTANT**

When reattaching the middle right cover (a), insert the lower rib into the the lower right cover (b). Slide it toward the machine front side to fasten three hooks (c) and then lower it to fasten three hooks (d), and fasten two hooks (e) at the machine rear side.

Check if three hooks (d) at the machine rear side are surely fastened.

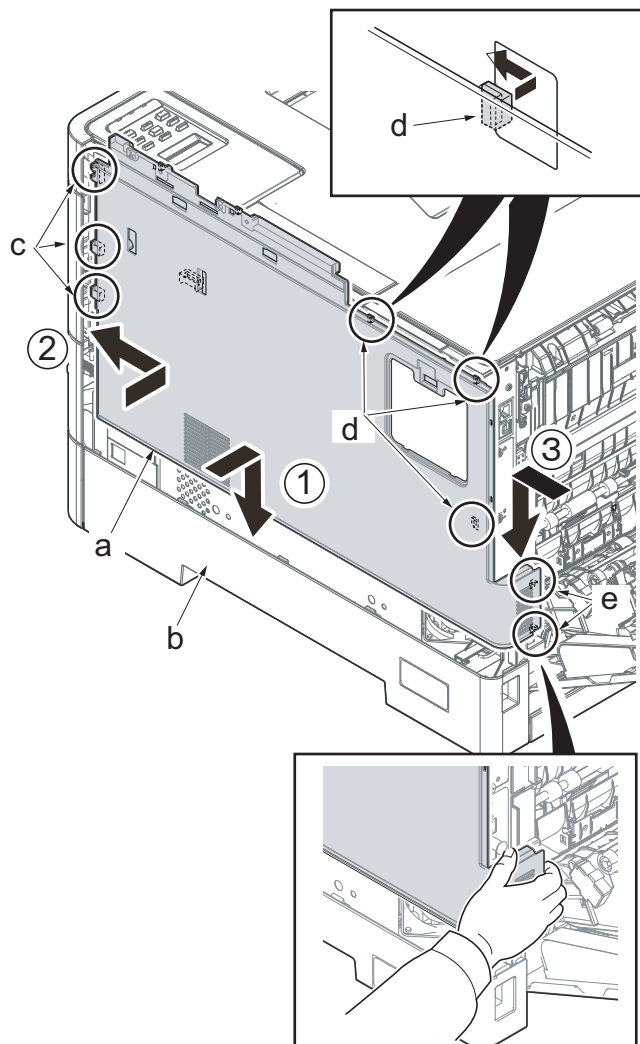


Figure 4-246

13. Remove the network connector cap (a).

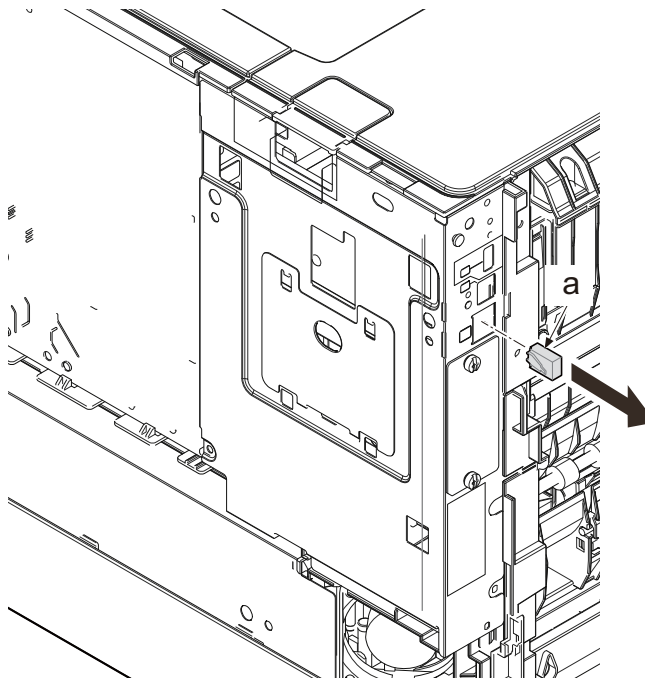


Figure 4-247

14. Remove the optional board (b), if installed.

\*: Remove two pins (a) and remove it.

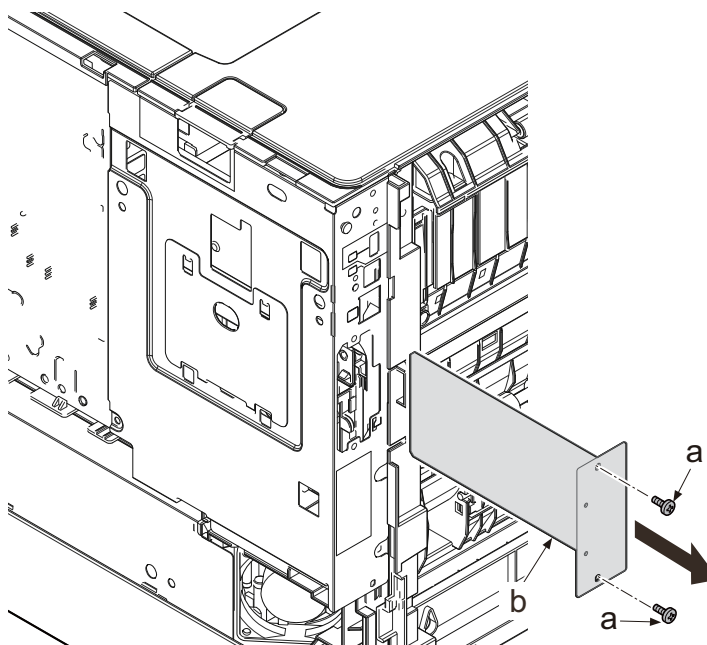


Figure 4-248

15. Remove four screws (a)(M3x8).

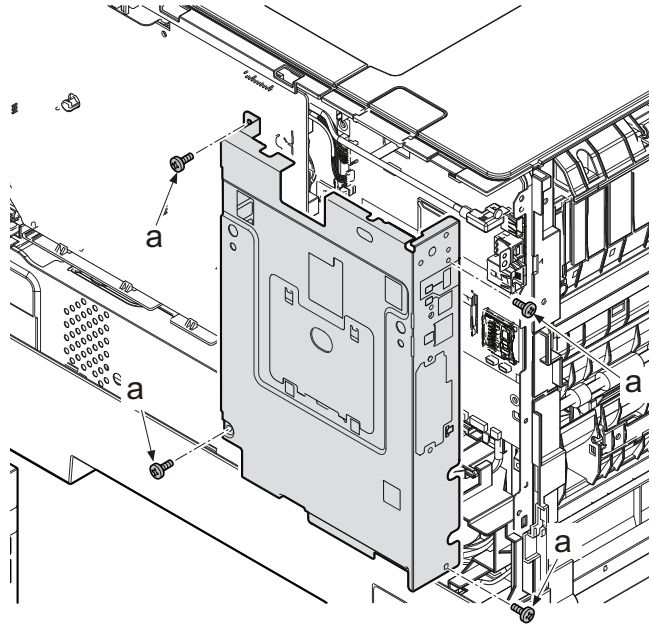


Figure 4-249

16. Remove the network connector (a) while sliding it toward the machine rear side and then remove the controller shield (b).

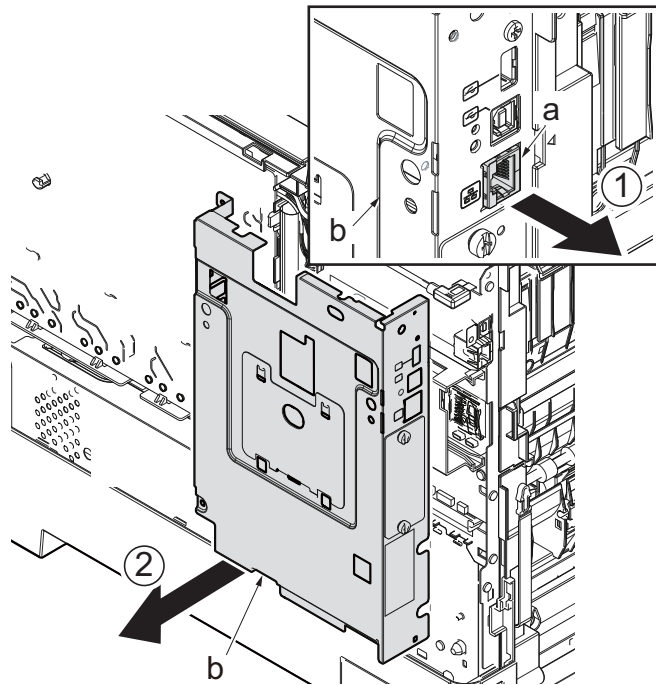
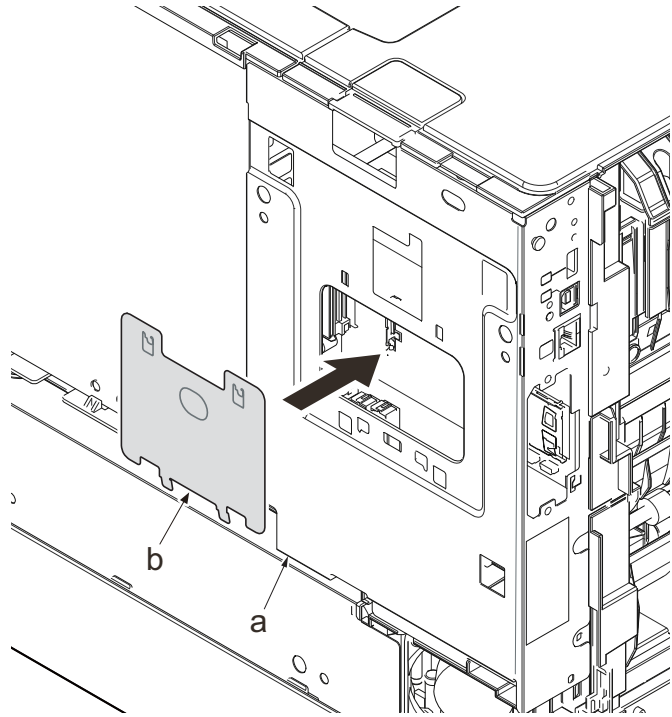


Figure 4-250

**IMPORTANT**

If removing the shield cover (b) when removing the controller shield (a), reattach it at that time.

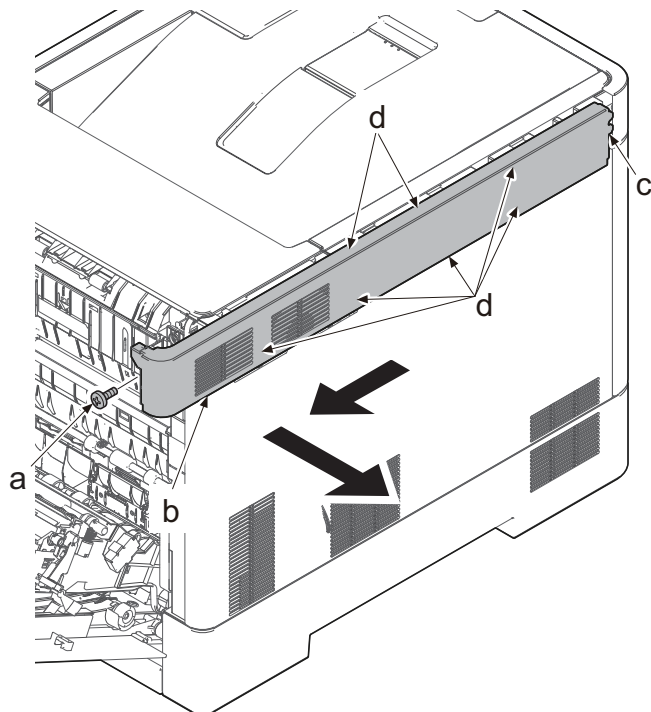


**Figure 4-251**

17. Remove the screw (a)(M3x8).
18. Slide the upper left cover (b) toward the machine rear side and detach it.

**IMPORTANT**

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.



**Figure 4-252**

19. Release two pins (b) and slide the toward the machine front side and detach top cover (a).

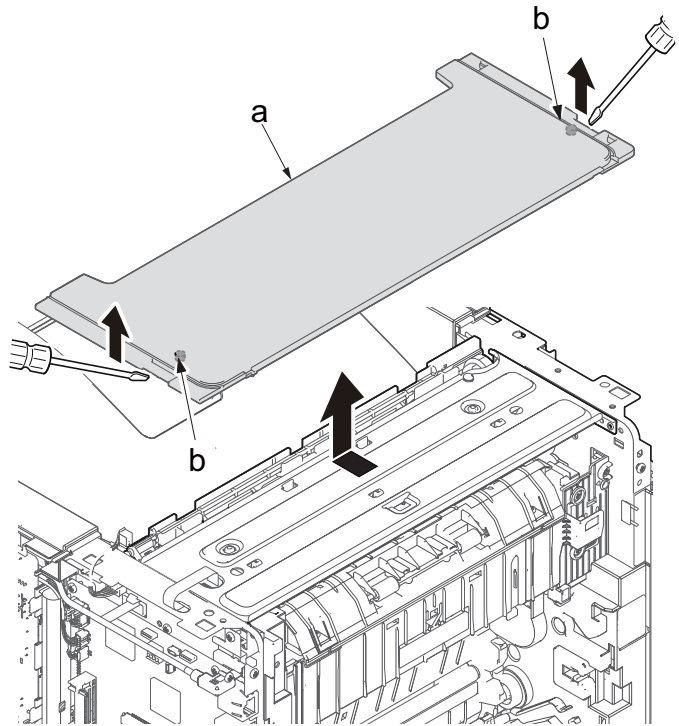


Figure 4-253

20. Remove the FFC (b) from the connector (a) of the main/engine PWB. Pull out from the opening (c).

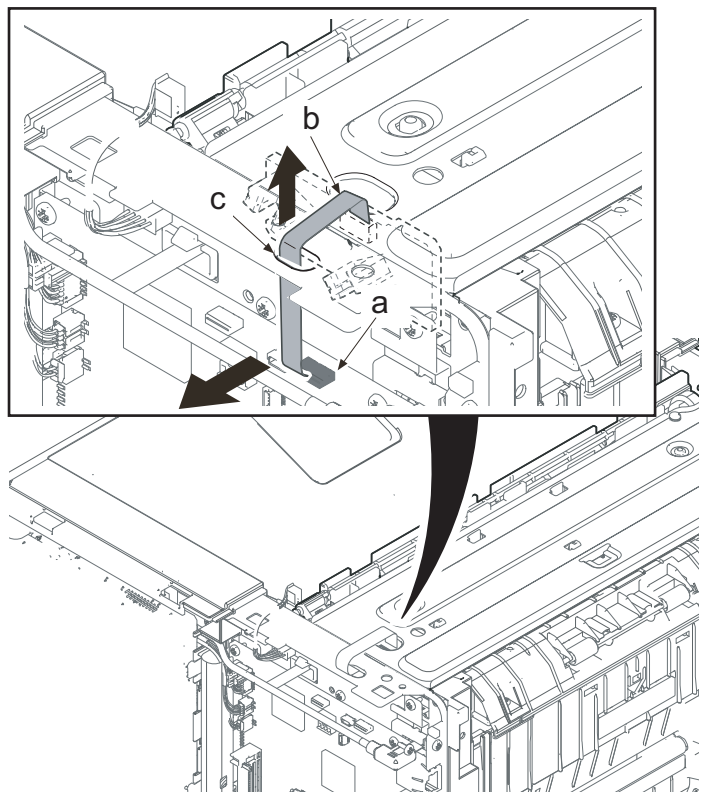


Figure 4-254

21. Remove four screws (a)(M3x8).

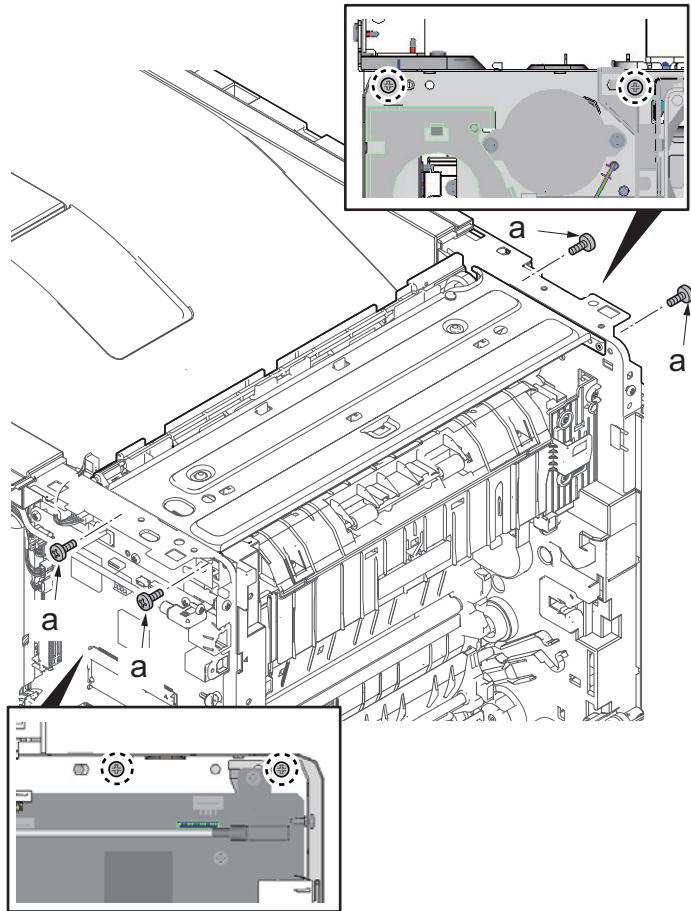


Figure 4-255

22. Disconnect the connector (b) of the exit PWB (a).

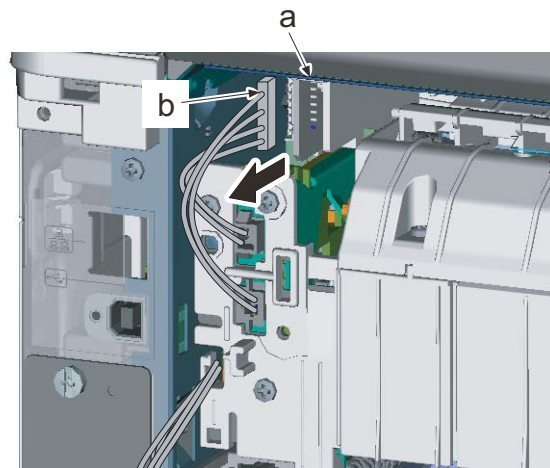


Figure 4-256



23. Detach the exit unit (a). Widen the left and right frame of the main unit slightly and pull the bosses of the stay of the exit unit (a) out from the holes to detach the exit unit (a).

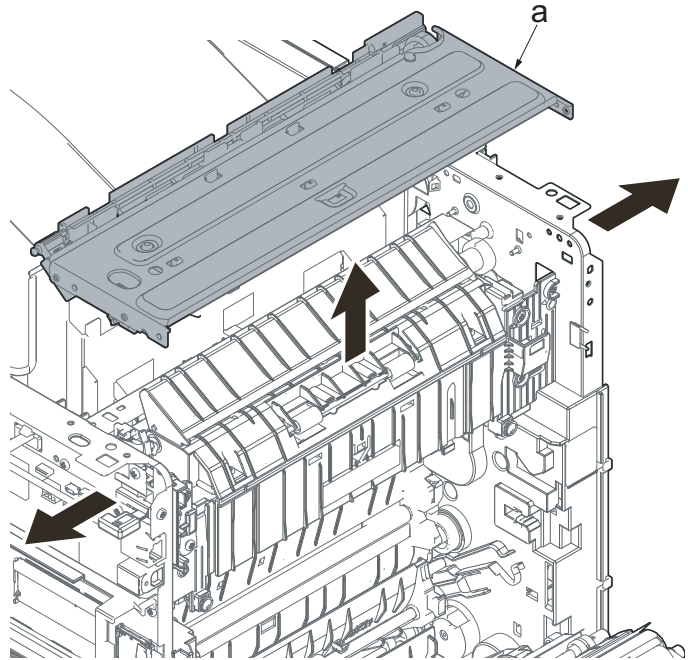


Figure 4-257

### 35/40 ppm model

1. Lift up the machine rear side to remove the hook and then remove the upper cover (a).

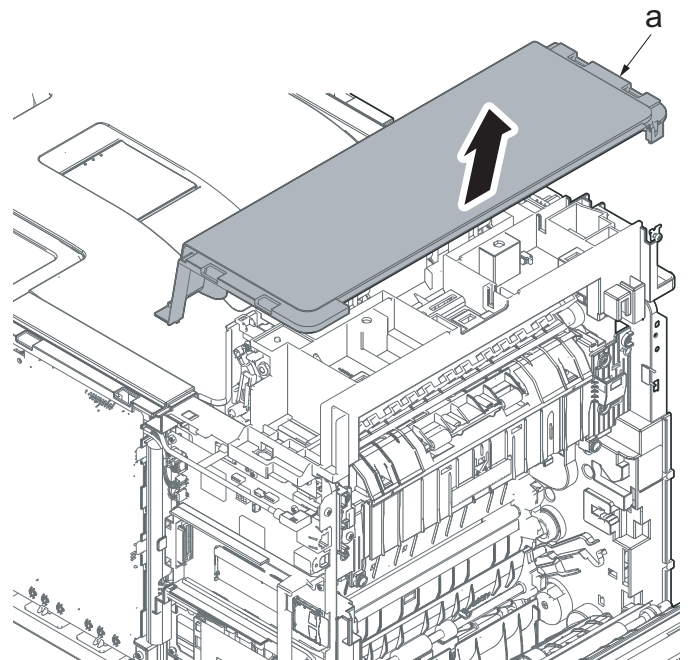
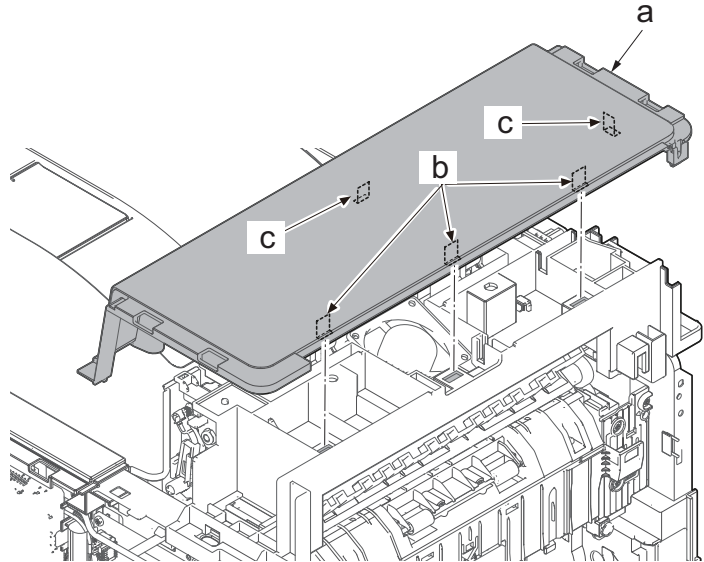


Figure 4-258



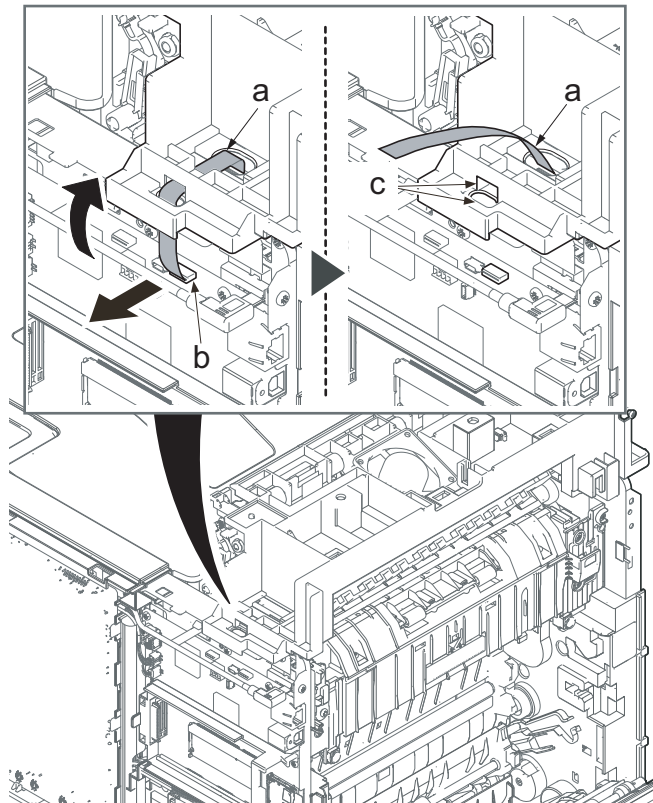
**IMPORTANT**

When reattaching the top cover (a), apply two hooks (c). Press the machine rear side and apply three hooks (b).



**Figure 4-259**

2. Disconnect the FFC (a) from the connector (b) of the main/engine PWB and pull it out from the opening (c).



**Figure 4-260**

3. Disconnect the connector (a) of the exit fan motor and release the wire (b) from five hooks (c).

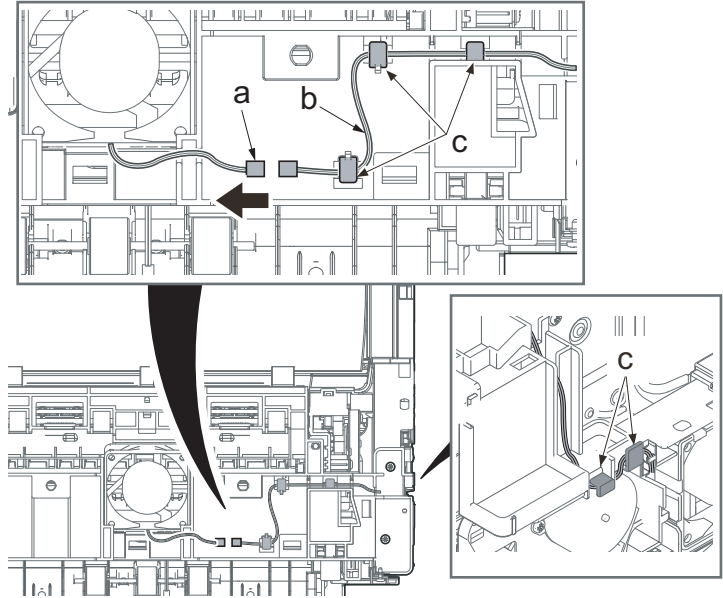


Figure 4-261

4. (40 ppm model only)  
Disconnect the connector (a) of the duplex fan motor and release the wire (b) from two hooks (c).

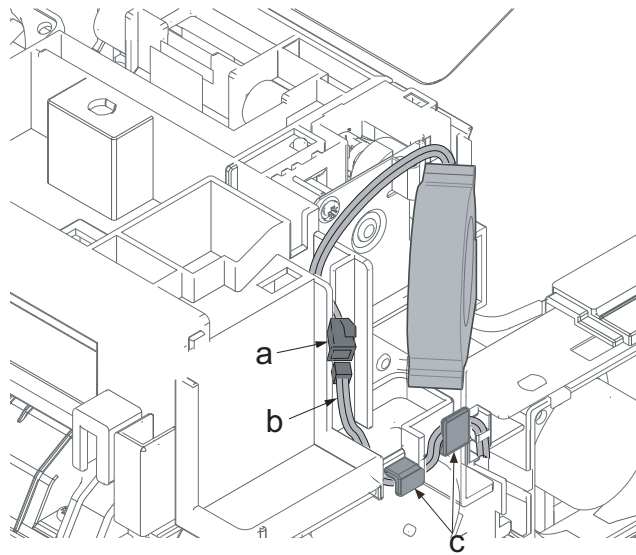


Figure 4-262

5. Remove four screws (a)(M3x8).
6. Lift up the upper stay unit (b), and detach it.

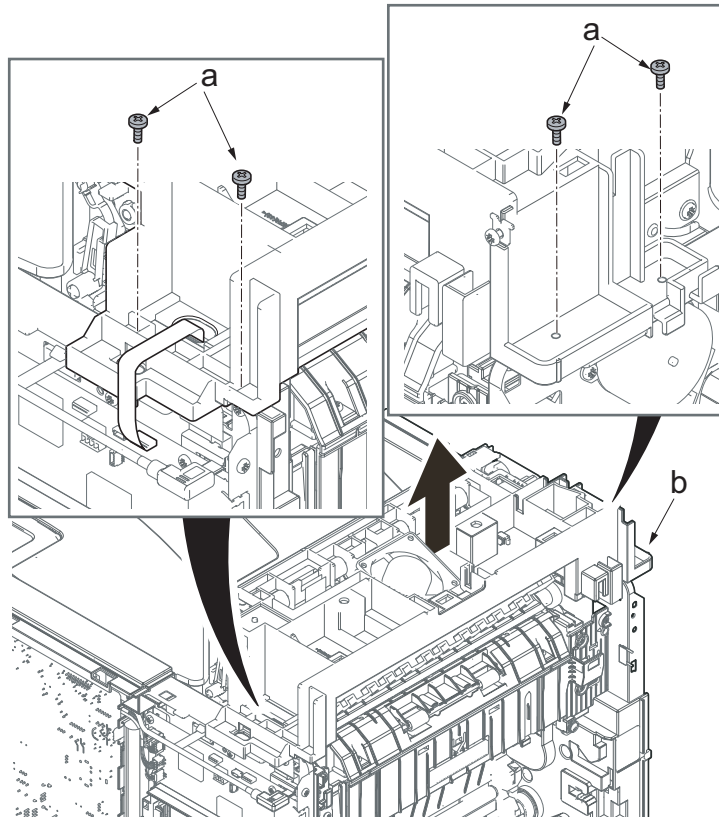


Figure 4-263

\*: Secure the screws in the order of the numbers when reattaching it.

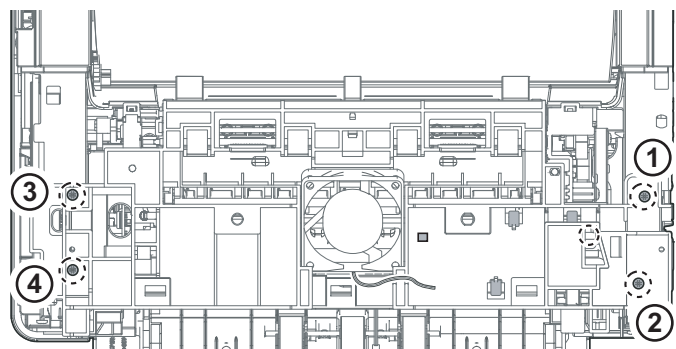


Figure 4-264

7. Remove the screw (a)(M3x8).
8. Remove the fuser wire cover (b).

\*: First insert the hook (c) into the opening (d) and secure the screw.

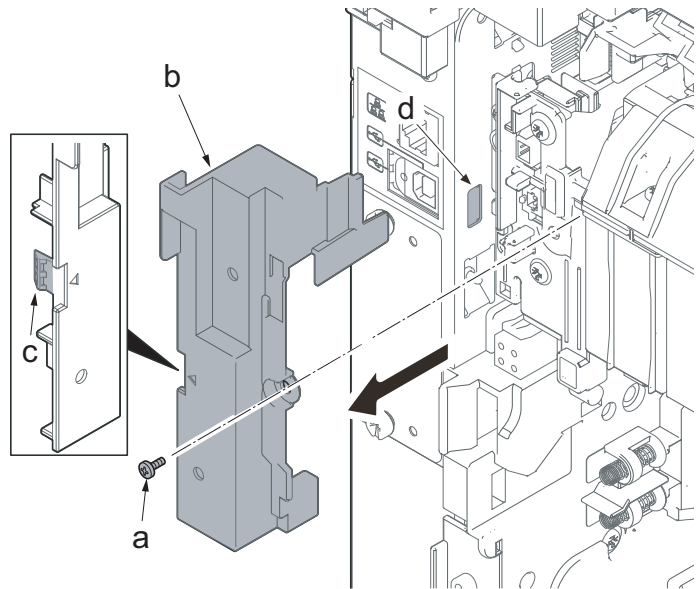


Figure 4-265

9. Disconnect the connector (b) of the exit PWB (a).

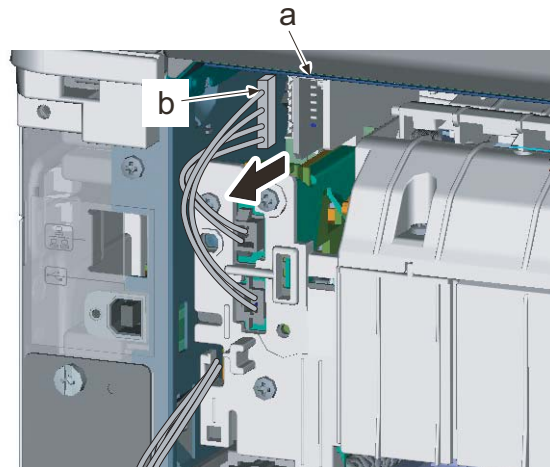


Figure 4-266

10. Detach the exit unit (a).

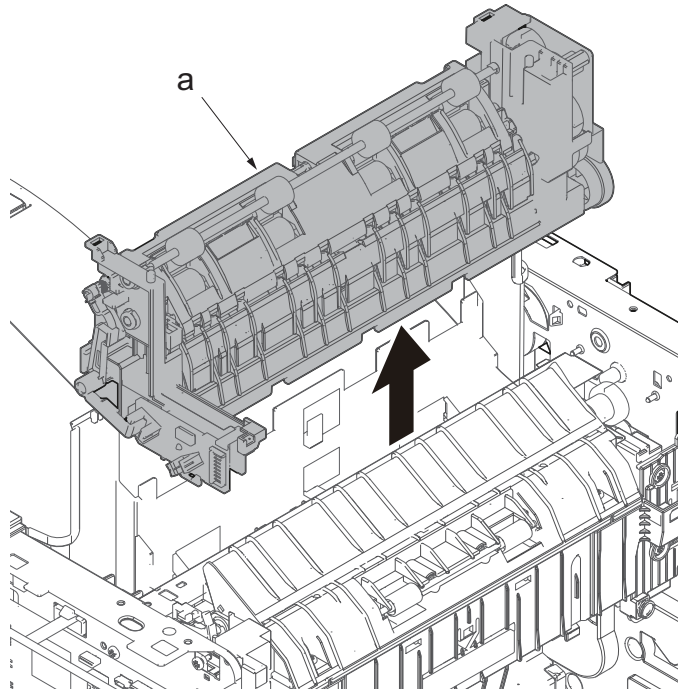


Figure 4-267

**IMPORTANT**

When reattaching the exit unit (a), insert the gear shaft (b) into the hole on the side plate and two positioning pins (c) into the holes. Then, insert the projections (e) into two square holes (d).

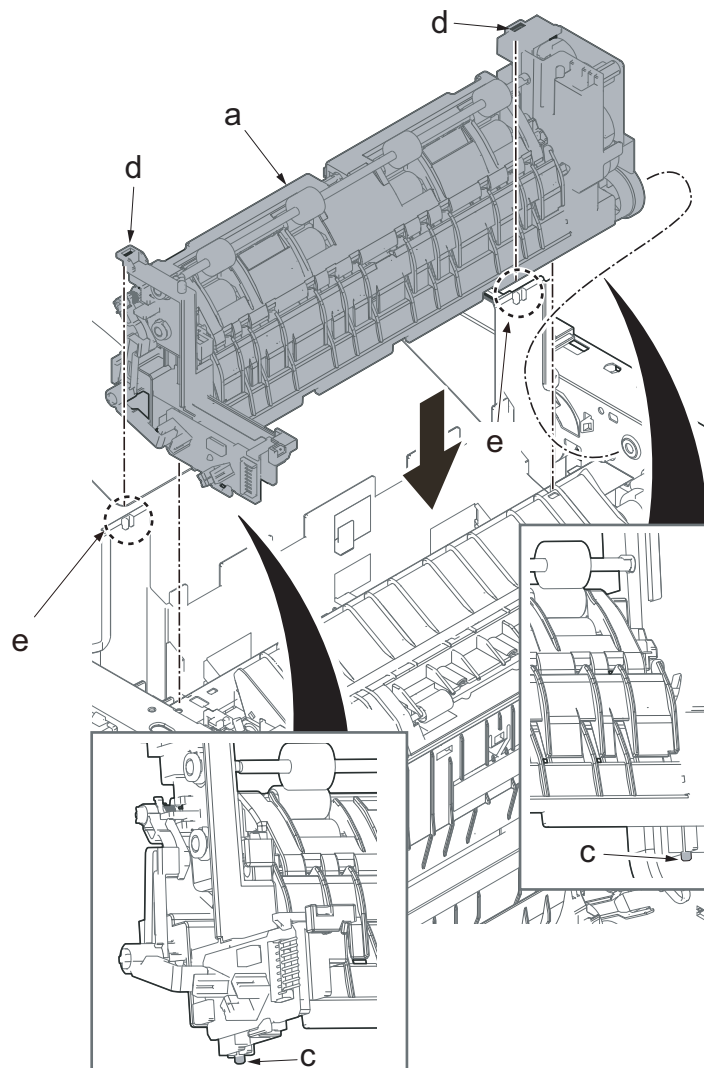


Figure 4-268

## (5) Duplex conveying unit

### (5-1) Detaching and reattaching the duplex conveying unit

1. Open the rear cover (a).

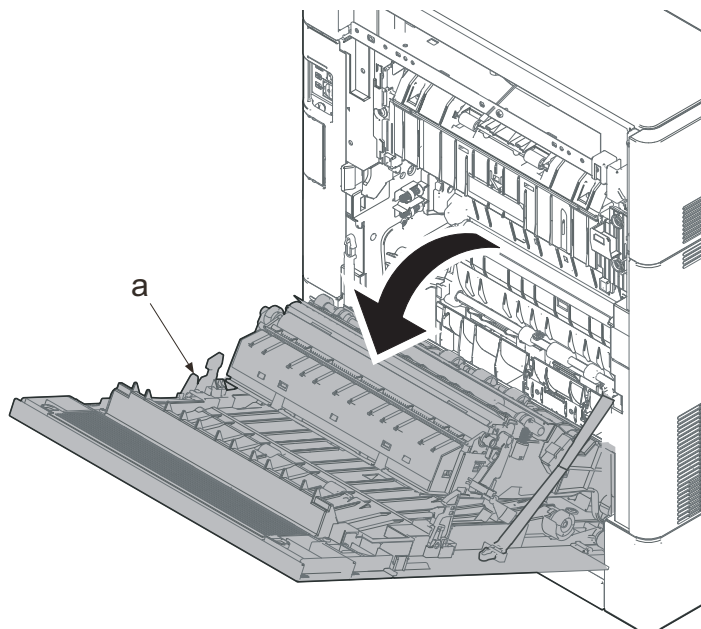


Figure 4-269

2. Pull the conveying stopper (a) toward the machine right side and rotate it by using a flat-blade screwdriver (b).
3. Release the hook (c) of the conveying stopper (a) from the rib (d) and pull the conveying stopper (a) out.

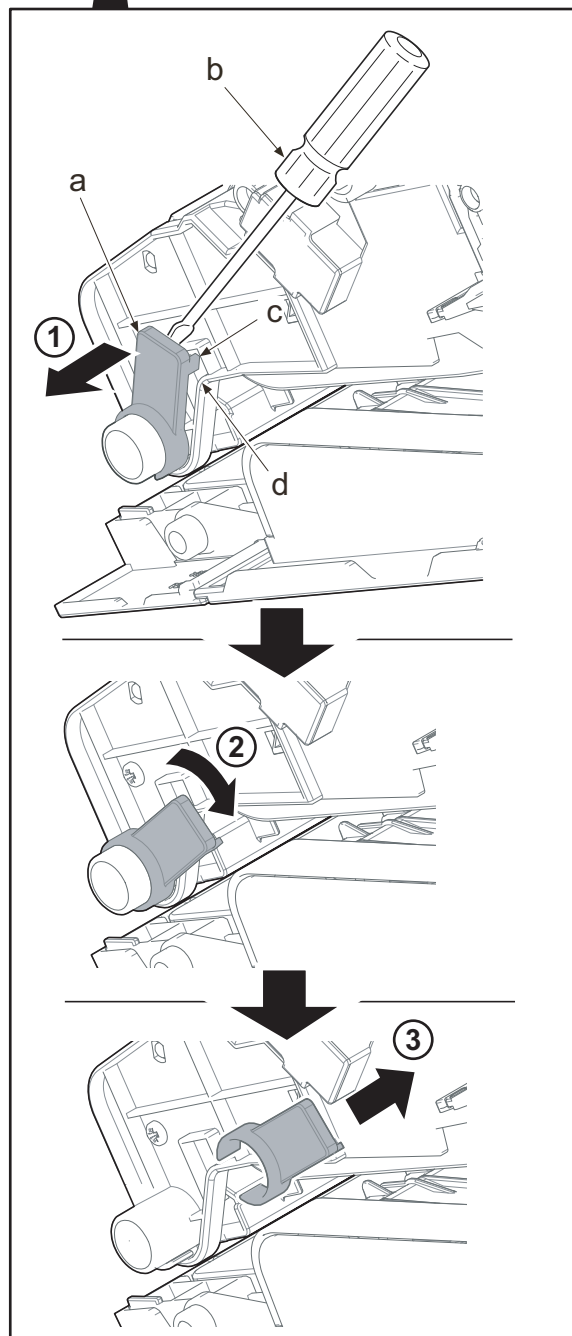
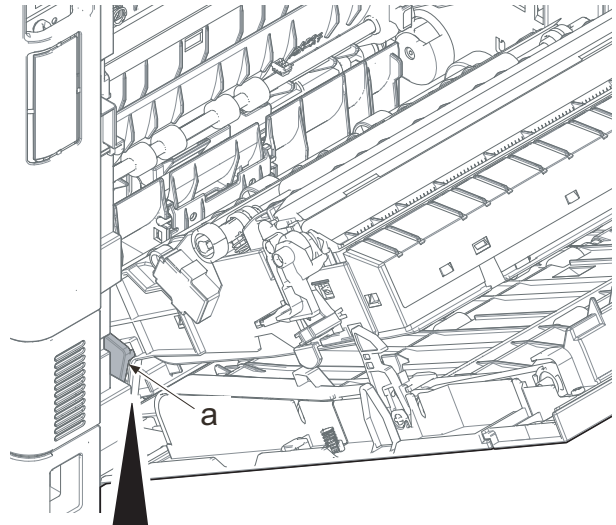


Figure 4-270



4. Slide the duplex paper conveying unit (a) toward the machine right side.
5. Release the fulcrum part of the duplex paper conveying unit (a) at the machine left side, and pull the unit out toward the machine rear side.

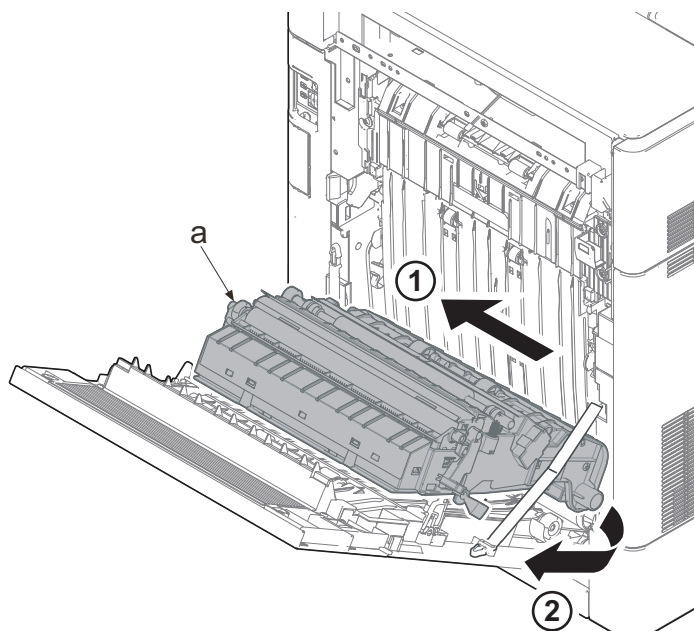


Figure 4-271



## (6) Drive section

### (6-1) Detaching and reattaching the main drive motor unit

1. Open the rear cover (a).

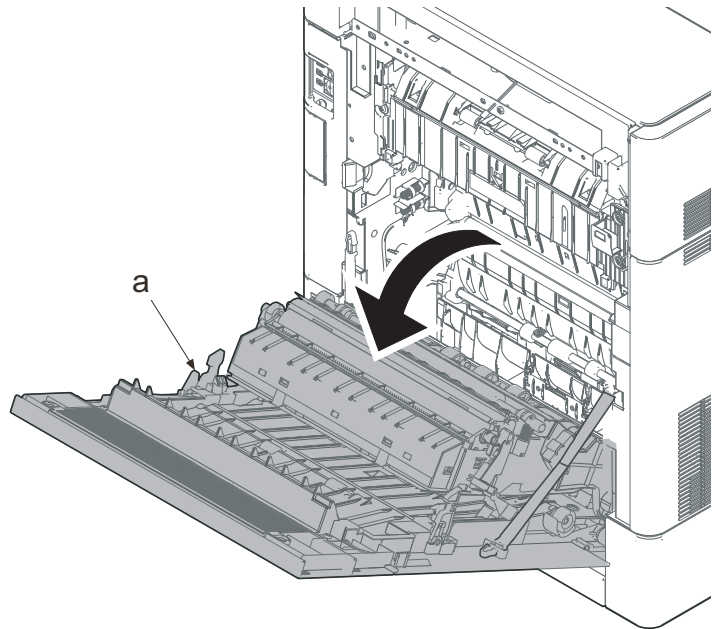


Figure 4-272

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

#### IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

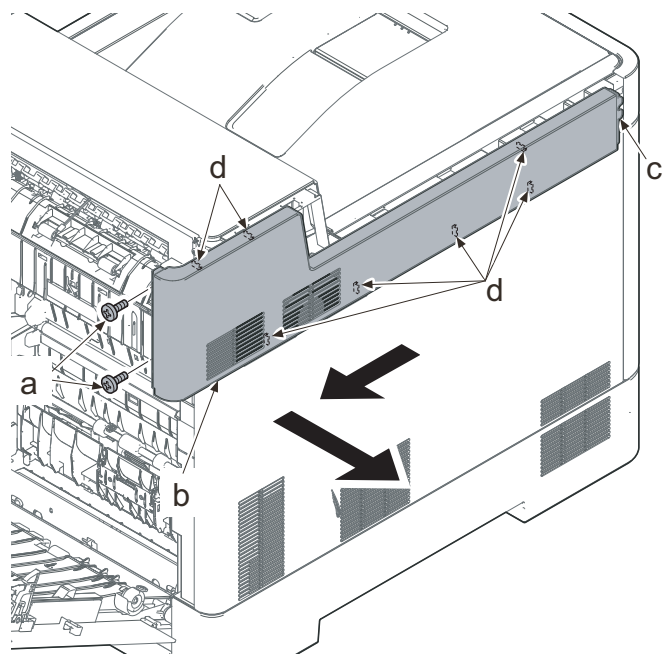


Figure 4-273

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

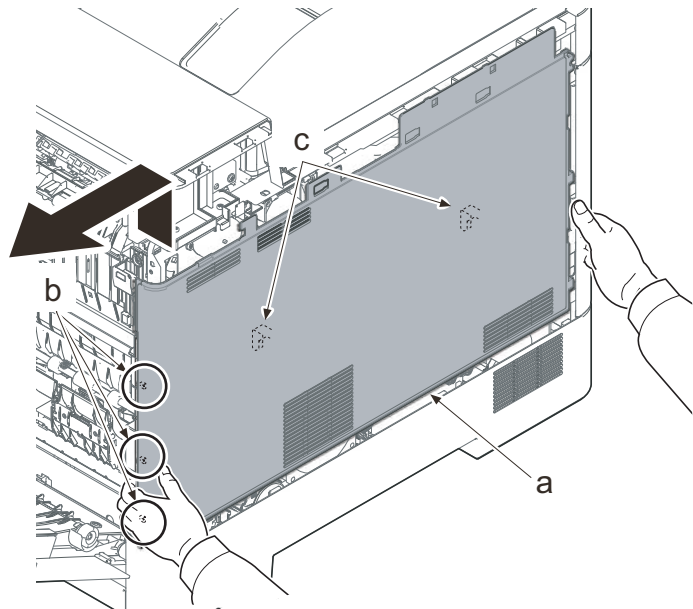


Figure 4-274

**IMPORTANT**

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). Slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

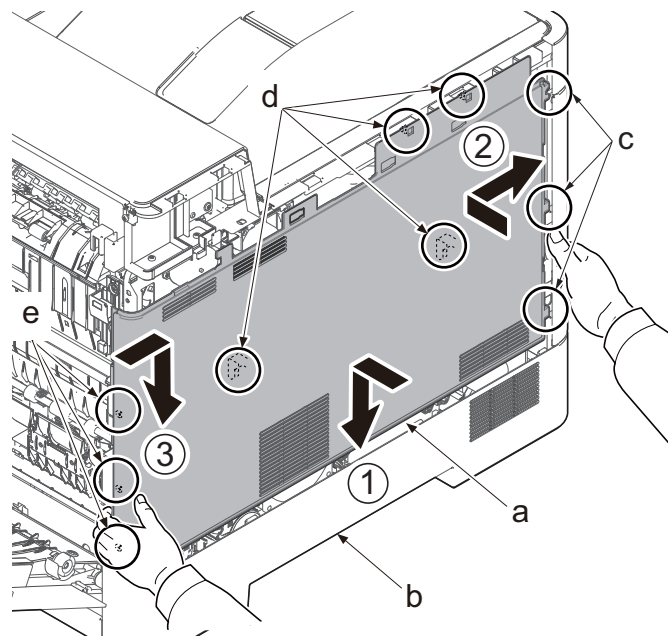


Figure 4-275

View of the main drive unit

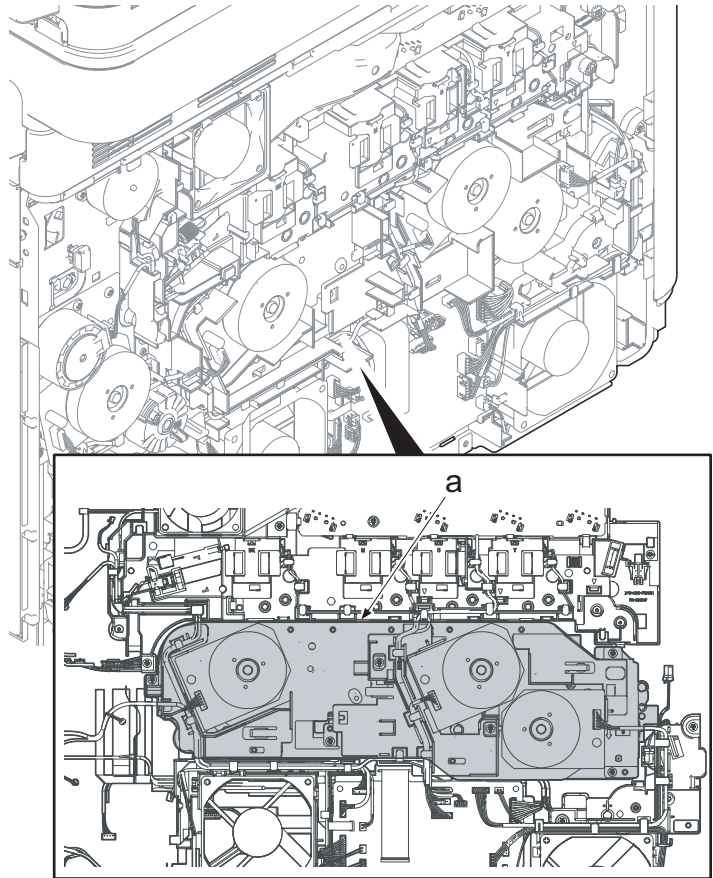


Figure 4-276

7. Disconnect the connector (b) of the drum motor 1 (a). Release the wire from seven hooks (c).

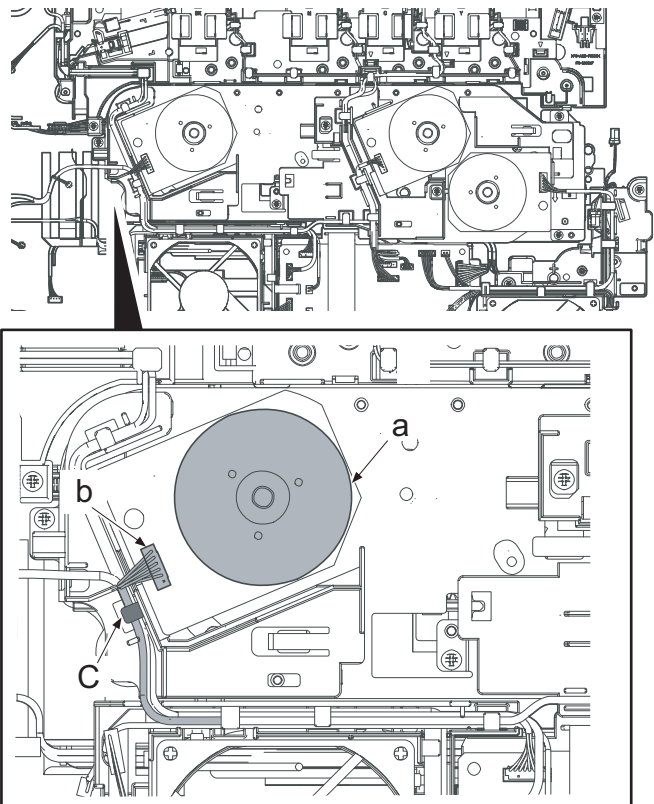


Figure 4-277

8. Disconnect three connectors (b) from the engine relay PWB (a). Release the wire (c) from eight hooks (d).

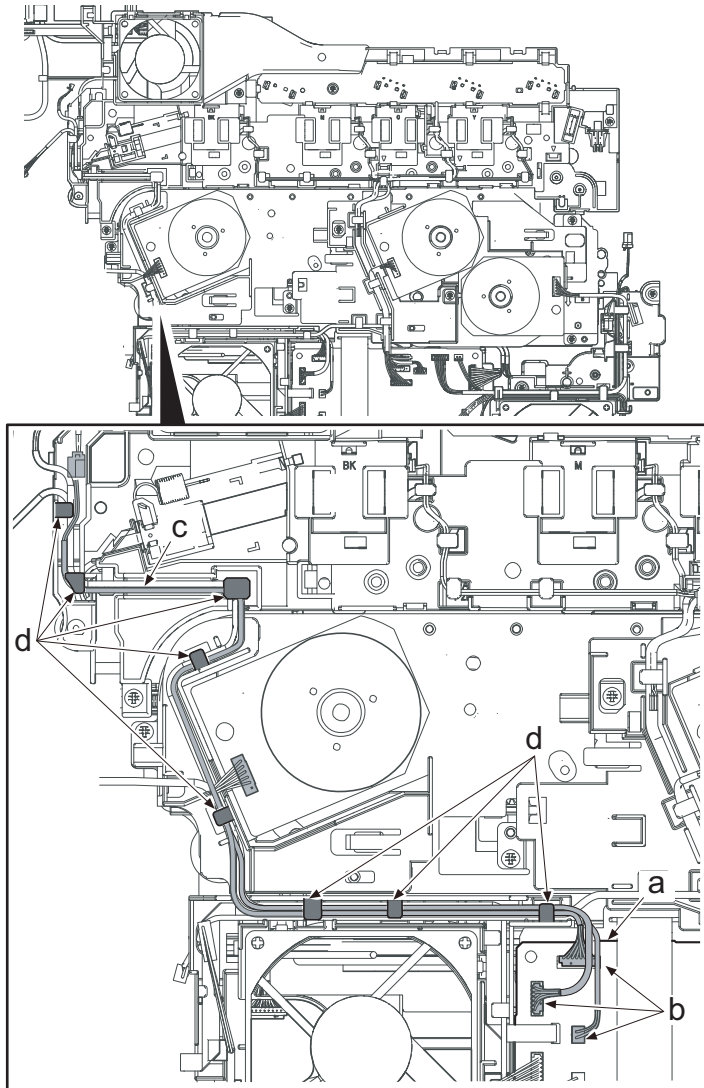


Figure 4-278

9. Disconnect the connector (b) of the drum motor 2 (a).
10. Release the wire from two hooks (f) of the wire guide (e).
11. Disconnect the connector (d) of the developer motor (c).

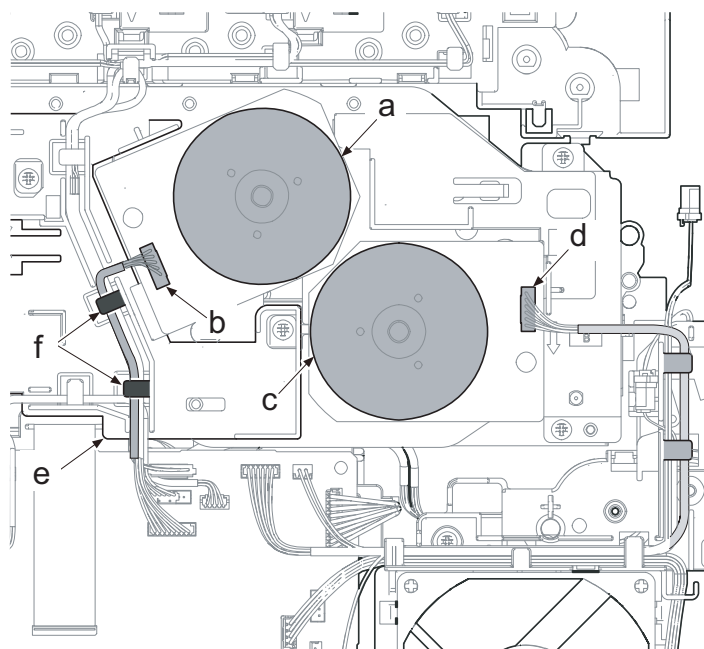


Figure 4-279

12. Disconnect two connectors from the engine relay PWB (a).
13. Release the wire from four hooks (c) of the wire guide (b).

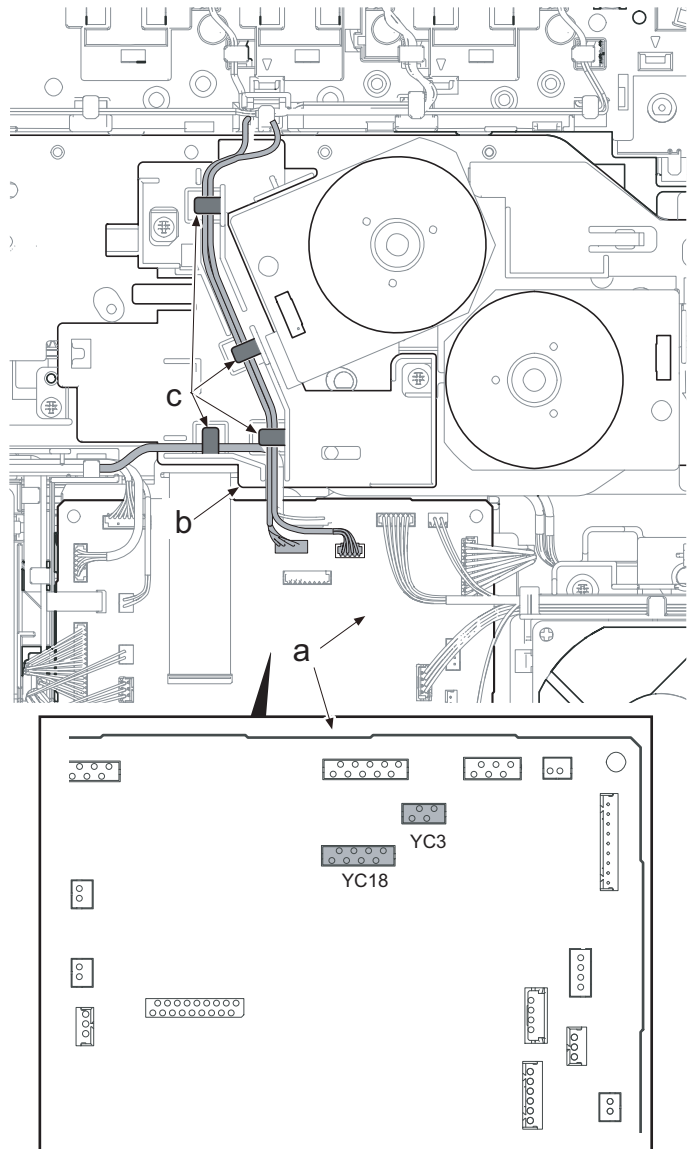


Figure 4-280

14. Open the top tray (b).

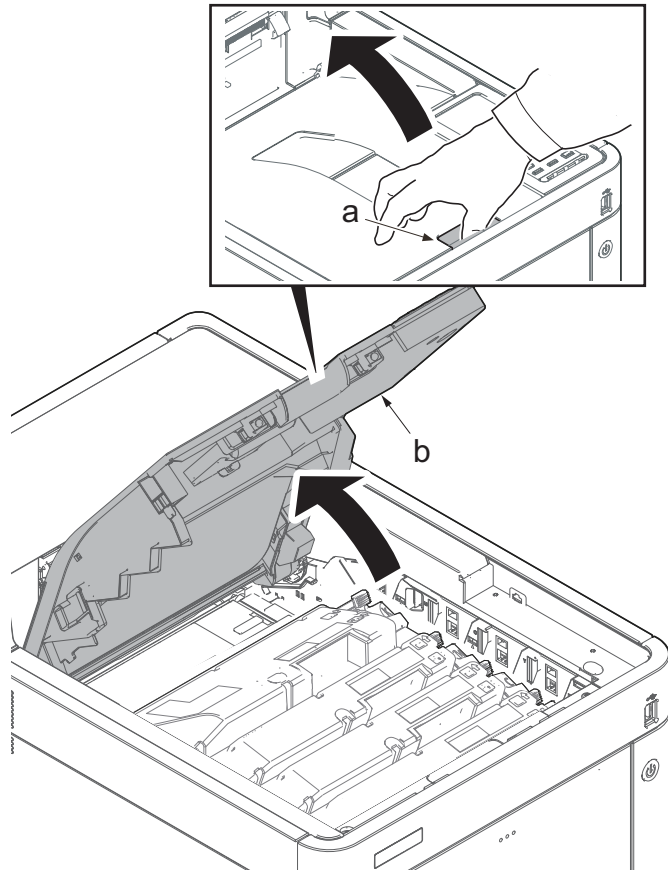


Figure 4-281

15. Detach toner container Y (a).

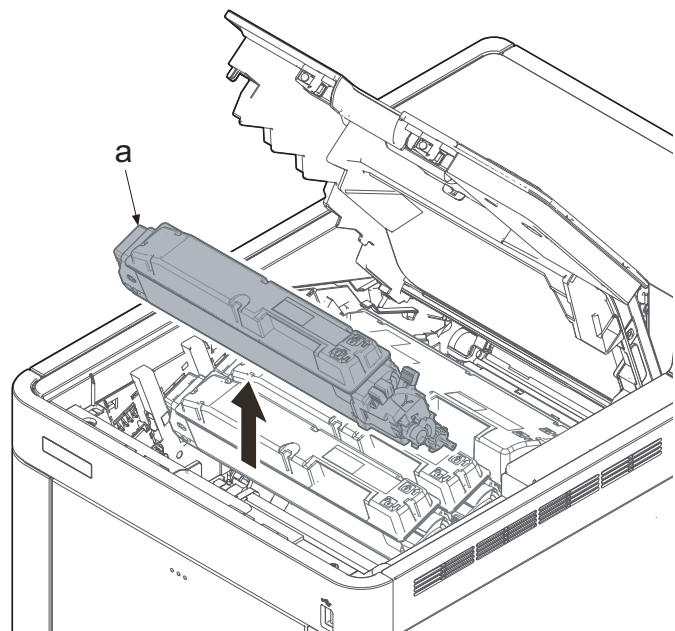


Figure 4-282

16. Remove the screw (a)(M3x12).
17. Remove the lever cover (b).
18. Lift up the drive release lever (c).

\*: When raising the lever, the joint of the drive coupling is released.

**IMPORTANT**

If omitting to attach the lever cover, "Cover open" message is displayed while the tray switch is not turned on.

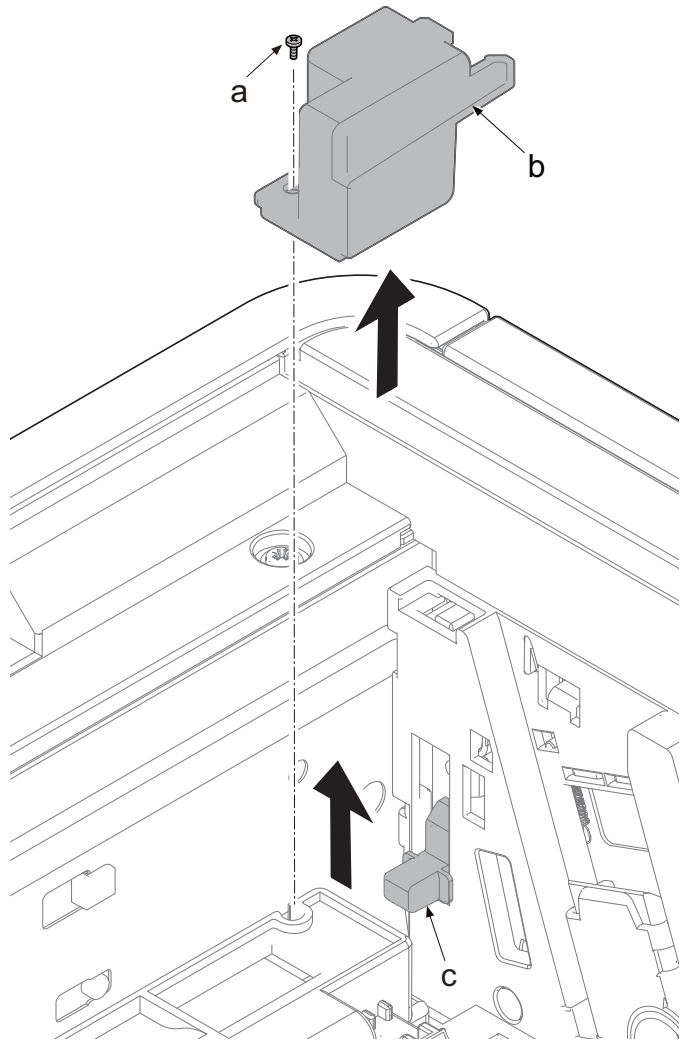


Figure 4-283



- 19. Remove six screws (a)(M3x8).
- 20. Detach the main drive motor unit (b).

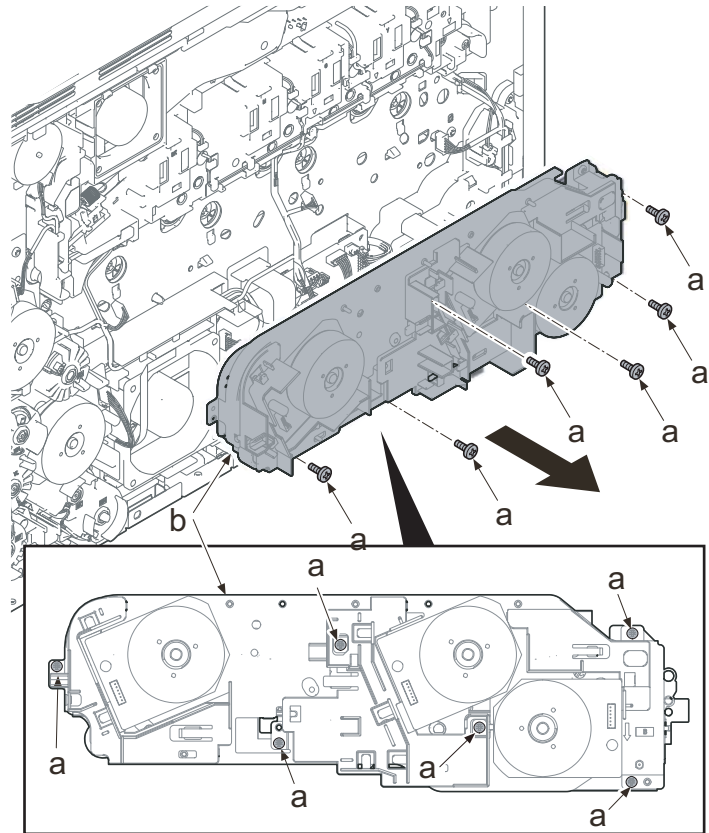


Figure 4-284

\*: When detaching the main drive motor unit (a), pull out the drive release lever (b) from the drive release joint (c).

- 21. Check the main drive motor unit and clean or replace it if necessary.
- 22. Reattach the parts in the original position.

**IMPORTANT**

After reattaching the main drive motor unit (a), check if the couplings for driving the primary transfer unit, the developer unit and the drum unit are relocated by being connected with the drive release lever (b).

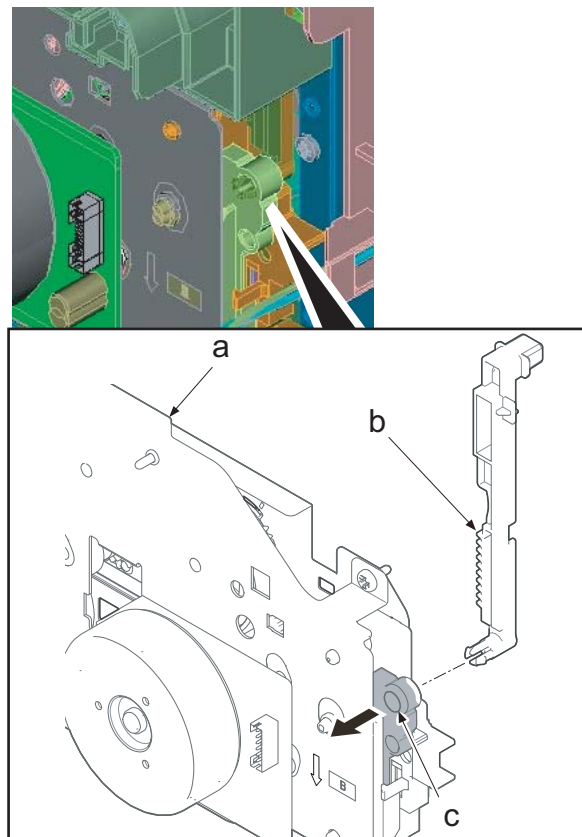


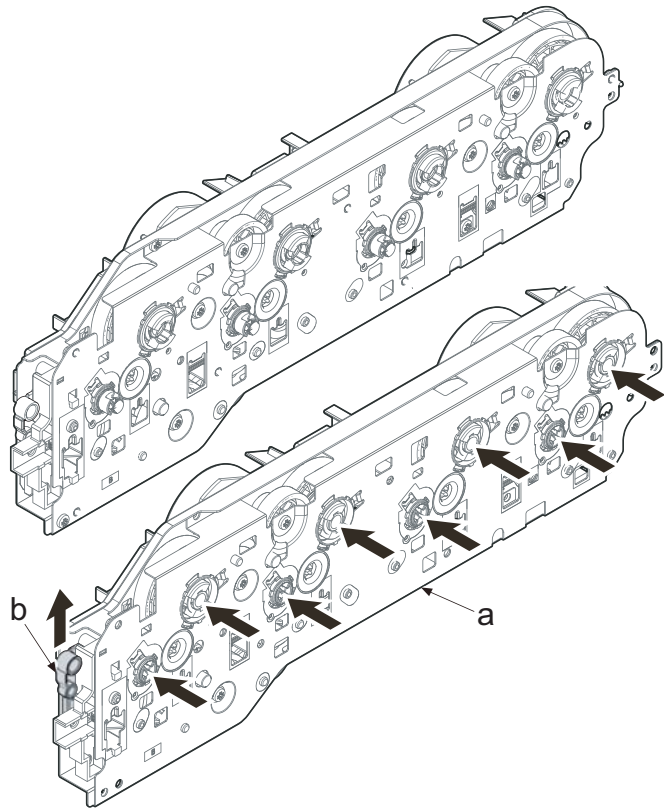
Figure 4-285



**IMPORTANT**

Attach the main drive motor unit (a) after confirming the drive coupling is at the release position.

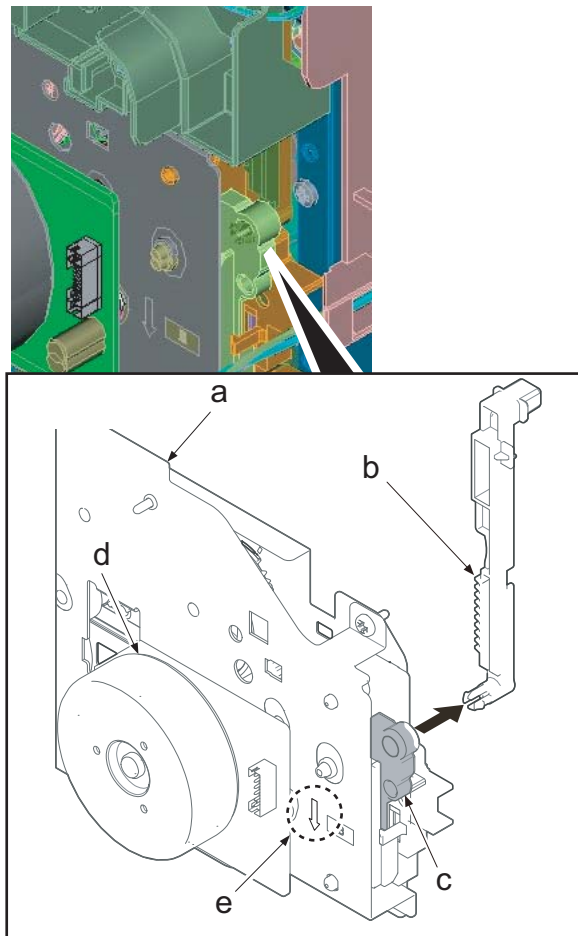
(Drive release joint (b) is raised.)



**Figure 4-286**

Insert the drive release lever (b) into the drive release joint (c) when reattaching the main drive motor unit (a).

Do not turn the developer motor (d) in the reverse direction of the engraving arrow (e).



**Figure 4-287**

## (6-2) Detaching and reattaching the conveying drive unit

1. Open the rear cover (a).

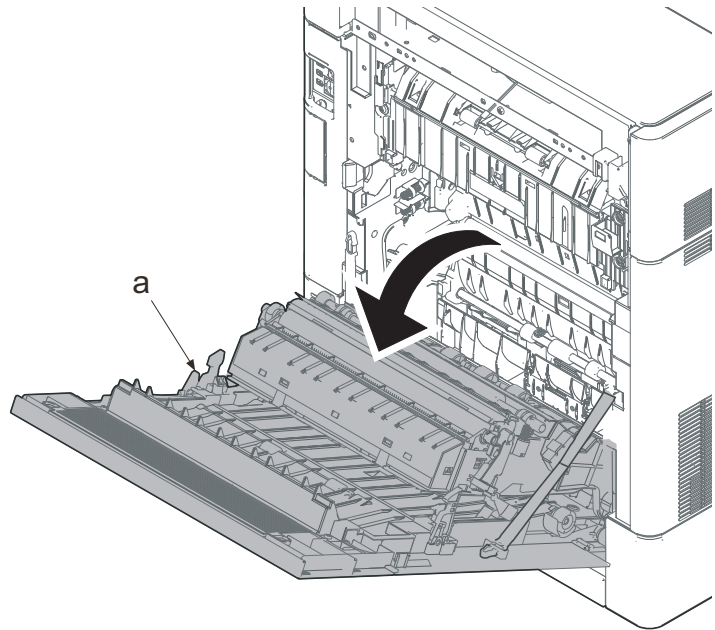


Figure 4-288

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

### IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

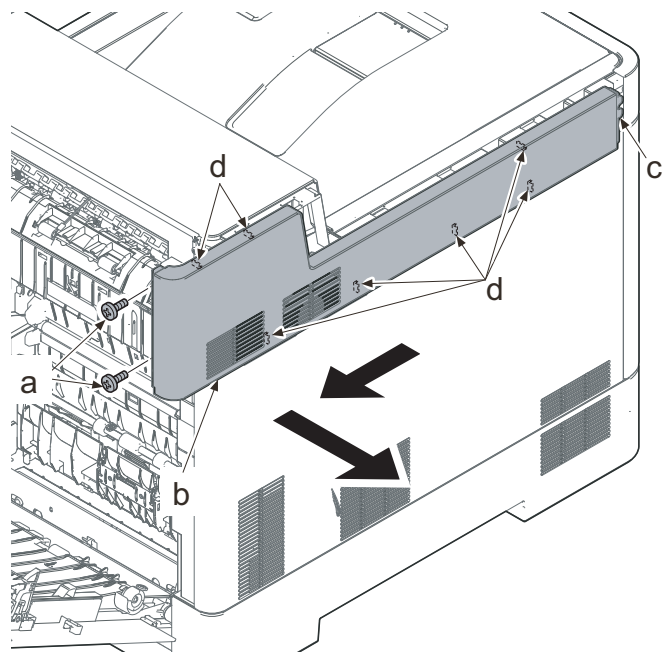


Figure 4-289

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

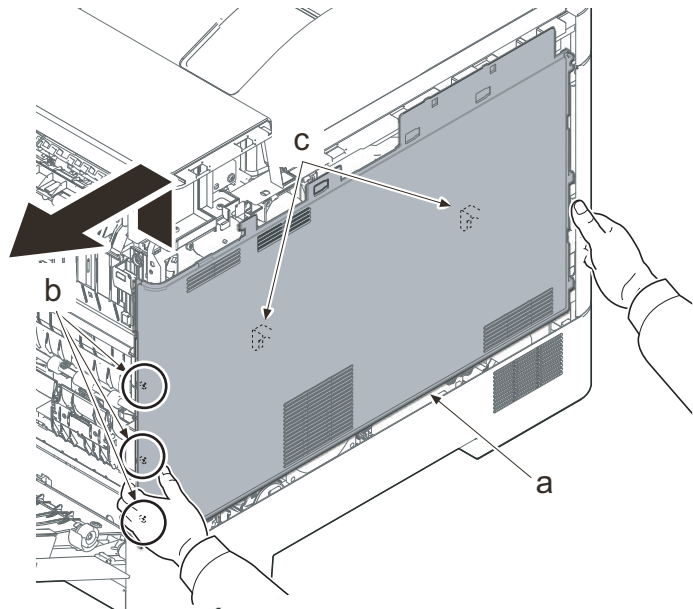


Figure 4-290

**IMPORTANT**

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). Slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

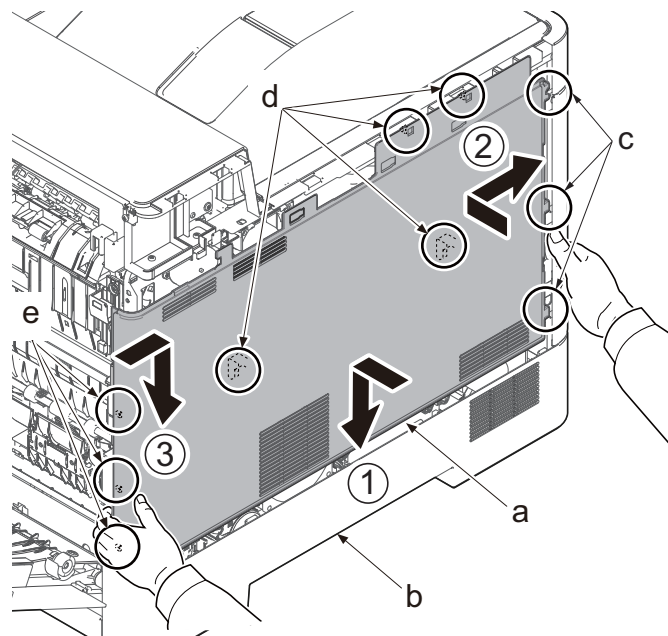


Figure 4-291

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

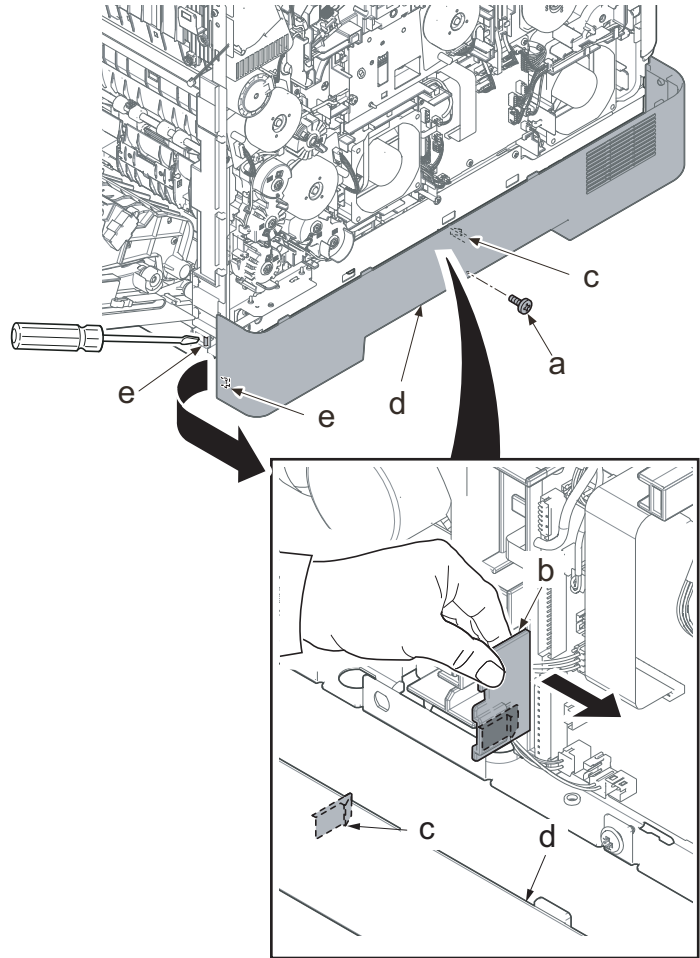


Figure 4-292

**IMPORTANT**

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, attach it with the screw.

Check if the hook at the center is surely fastened.

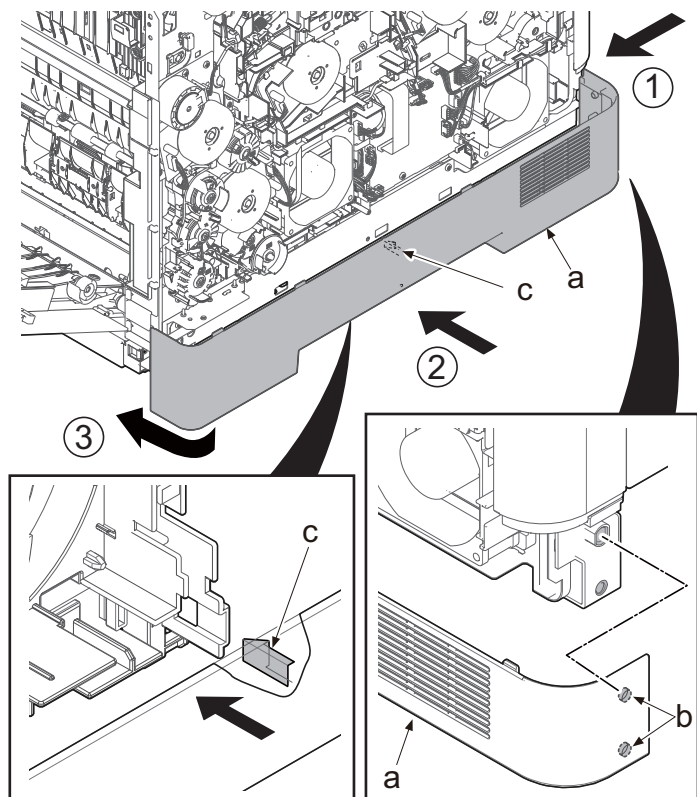


Figure 4-293

10. Disconnect the connector (b) of the primary transfer motor (a).
11. Release the wire from four hooks (c).

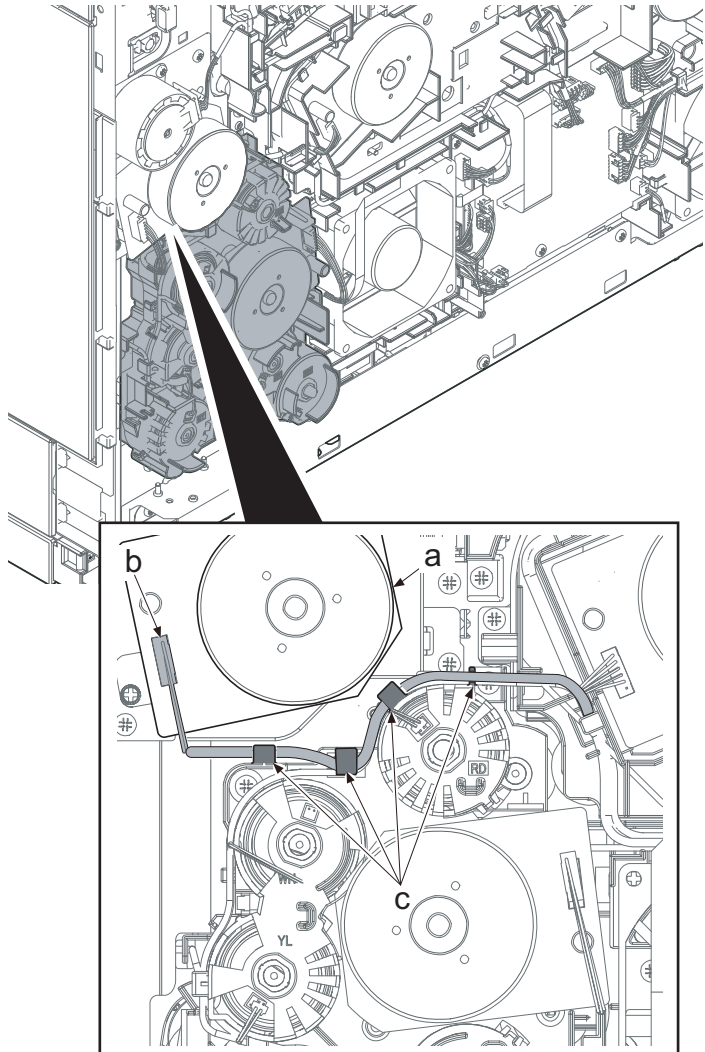


Figure 4-294

12. Disconnect the connector (b) and (e) of the clutch in the conveying drive unit (a).  
30 ppm model: 5 (b)  
35/40 ppm model: 6 (b) and (e)
13. Disconnect the connector (c) of the motor in the conveying drive unit.
14. Release the wire from six hooks (d).

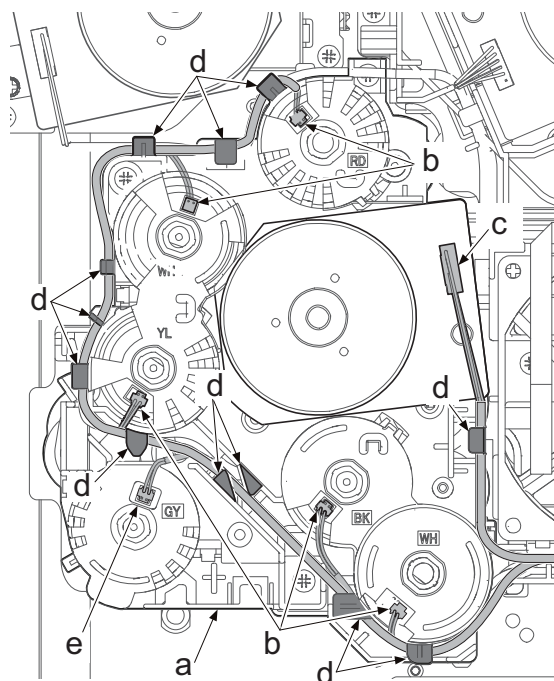


Figure 4-295



15. Remove three screws (a)(M3x12).
16. Detach the conveying drive unit (b).
17. Check the conveying drive unit and clean or replace it if necessary.
18. Reattach the parts in the original position.

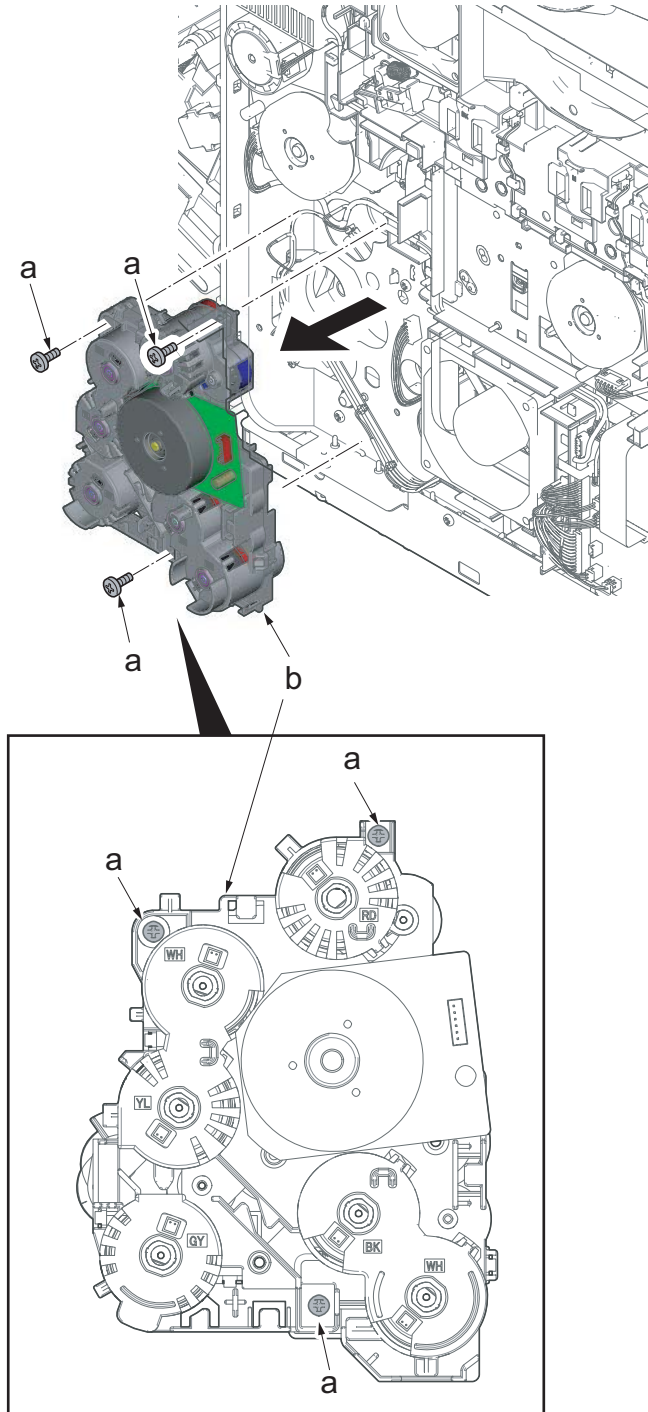


Figure 4-296

### (6-3) Detaching and reattaching the MP paper feed drive unit

1. Open the rear cover (a).

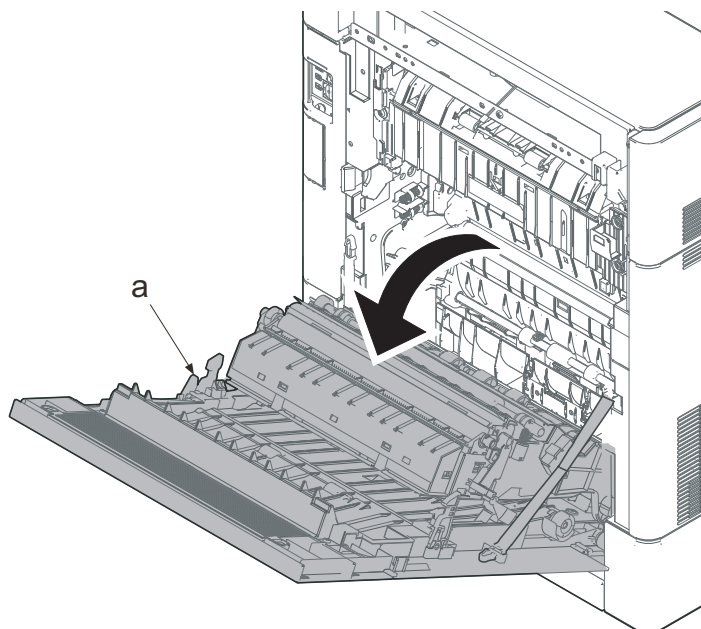


Figure 4-297

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

#### IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

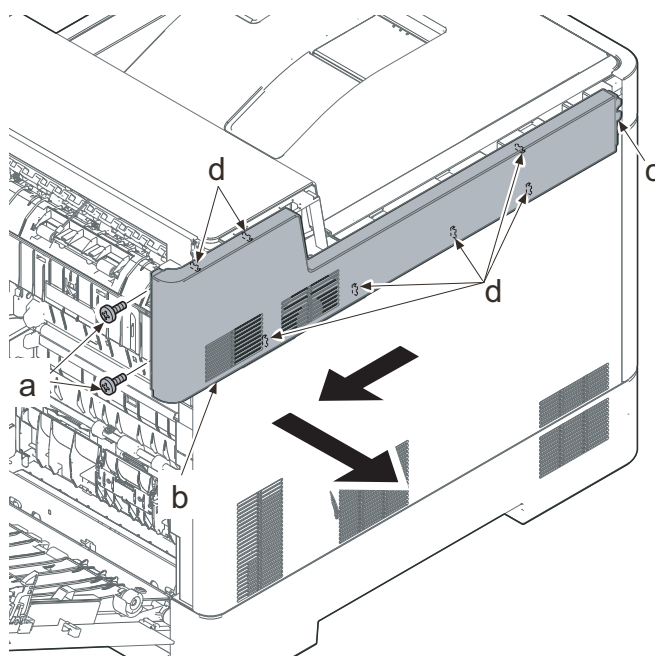


Figure 4-298

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

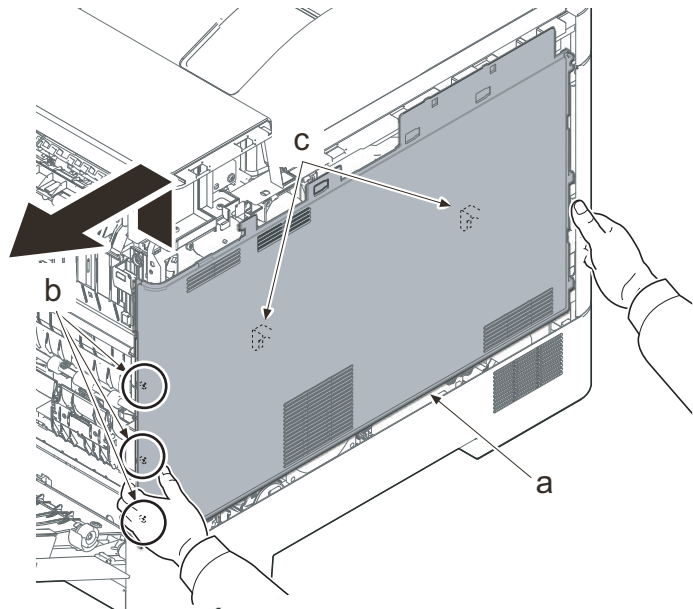


Figure 4-299

**IMPORTANT**

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). Slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

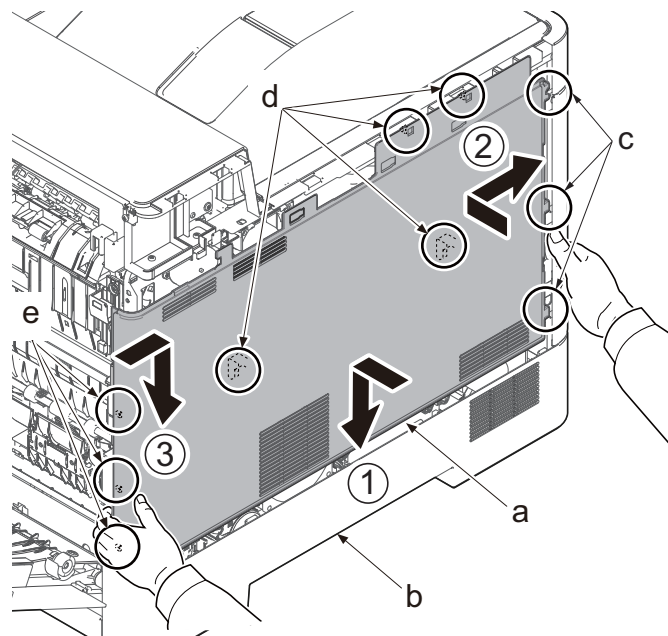


Figure 4-300



7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

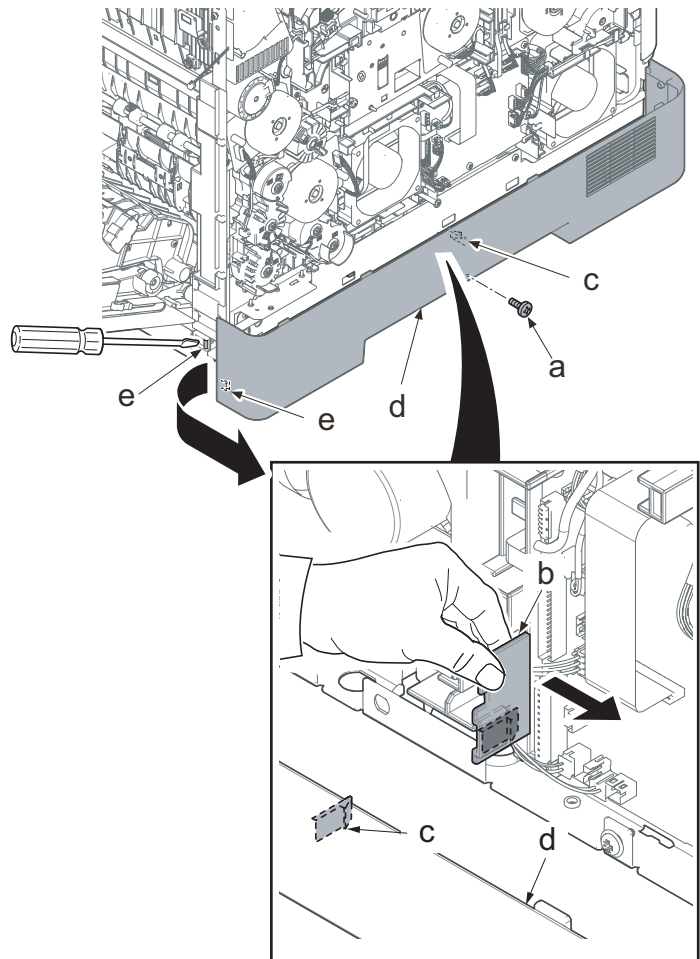


Figure 4-301

**IMPORTANT**

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, attach it with the screw.

Check if the hook at the center is surely fastened.

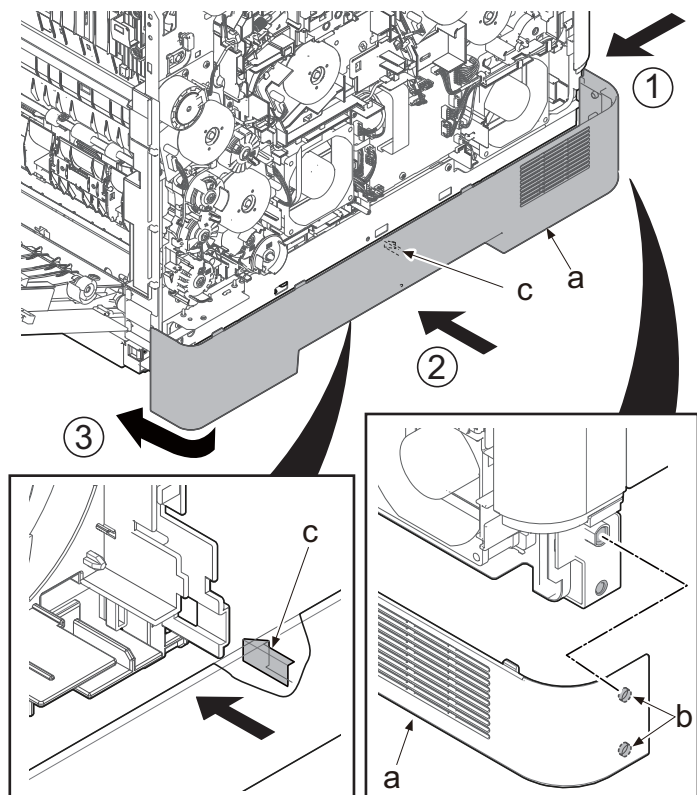


Figure 4-302

10. Open the top tray (b).

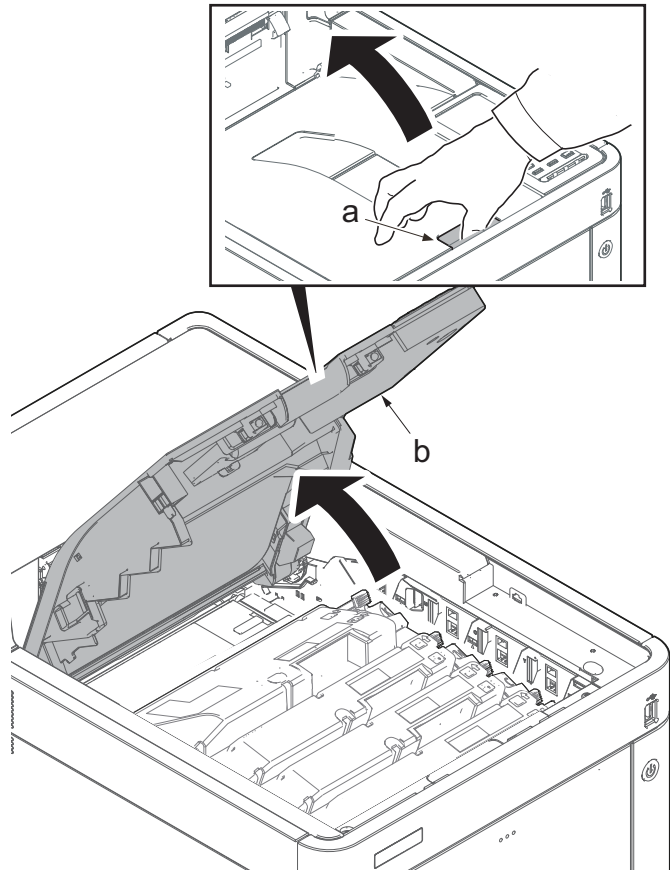


Figure 4-303

- 11. Open the MP tray (a).
- 12. Remove two screws (b)(M3x8).
- 13. Open the waste toner cover (c).

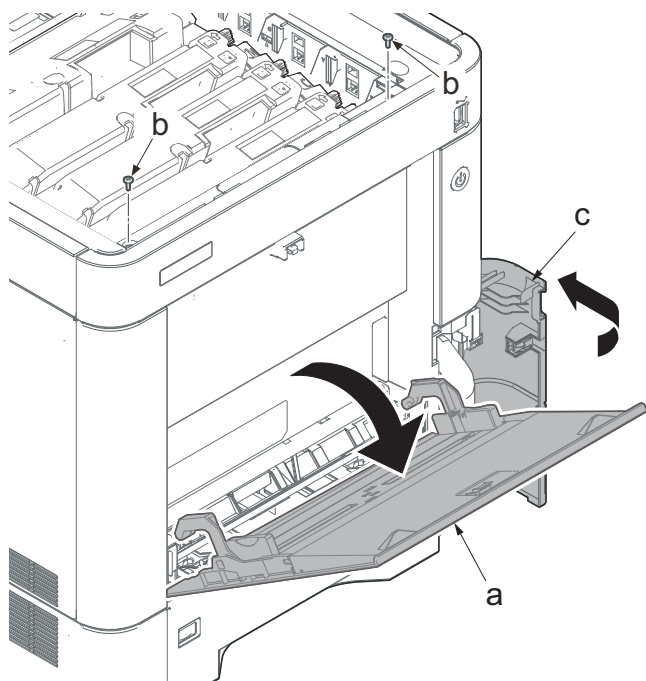


Figure 4-304

14. Slightly lift up the front cover (a) to release the boss (b).
15. Tilt the front cover (a) toward the machine front side.
16. Then, remove the front cover (a) by lifting it up.

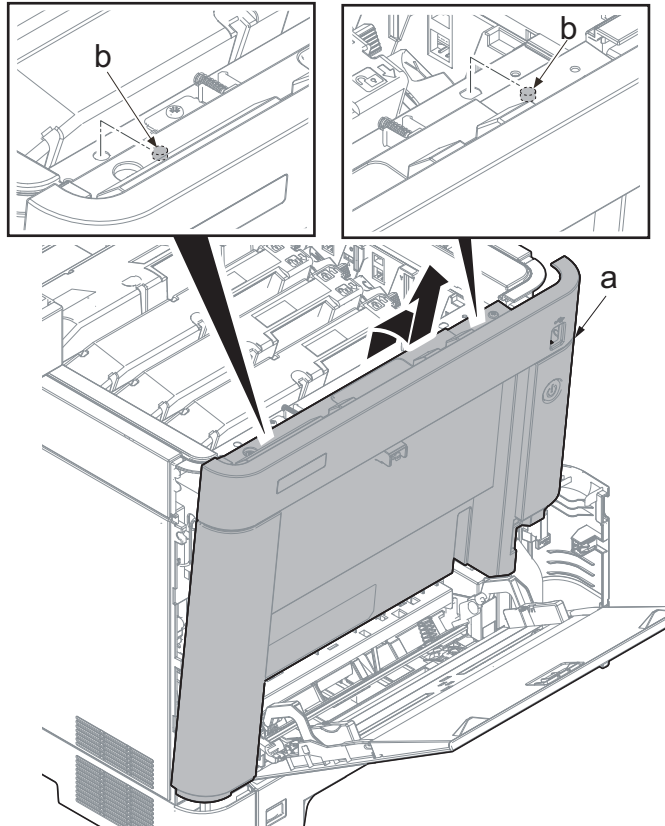


Figure 4-305

**IMPORTANT**

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, "cover open" will be displayed.

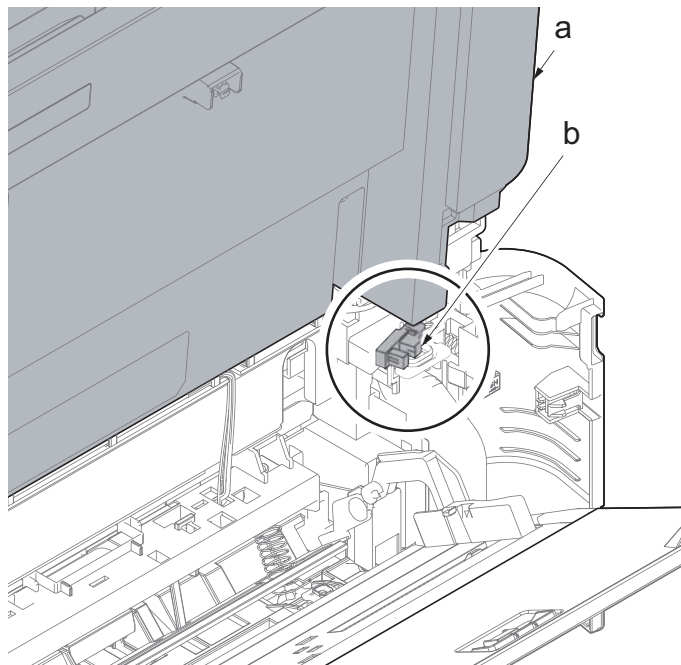


Figure 4-306

17. Pull out the cassette (a).
18. Open the MP tray (b) slightly.
19. Lift up the MP tray cover (c) and release two hooks (d).

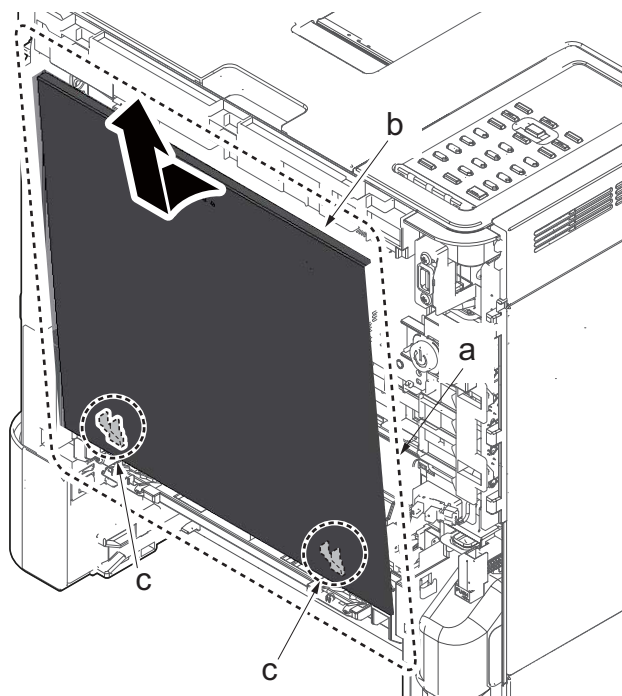


Figure 4-307

- 20. Fully open the MP tray (a).
- 21. Slide the arm (b) to the machine rear side and lift it up to remove.

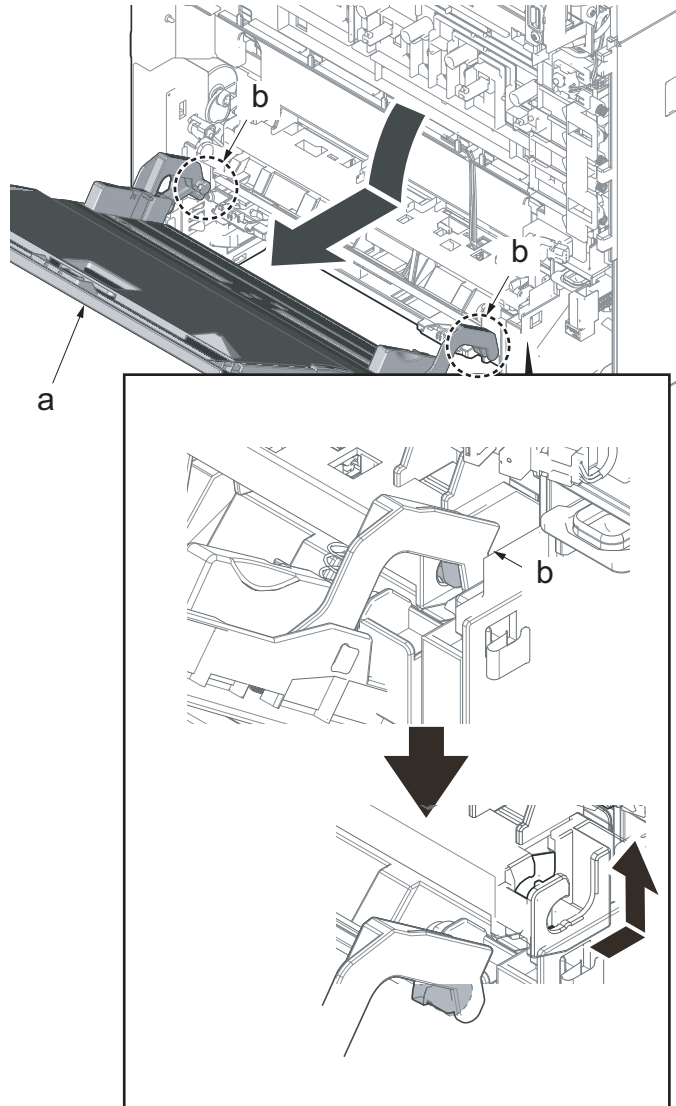


Figure 4-308

- 22. Rotate the cam (a) inside the main unit to the position in the figure.

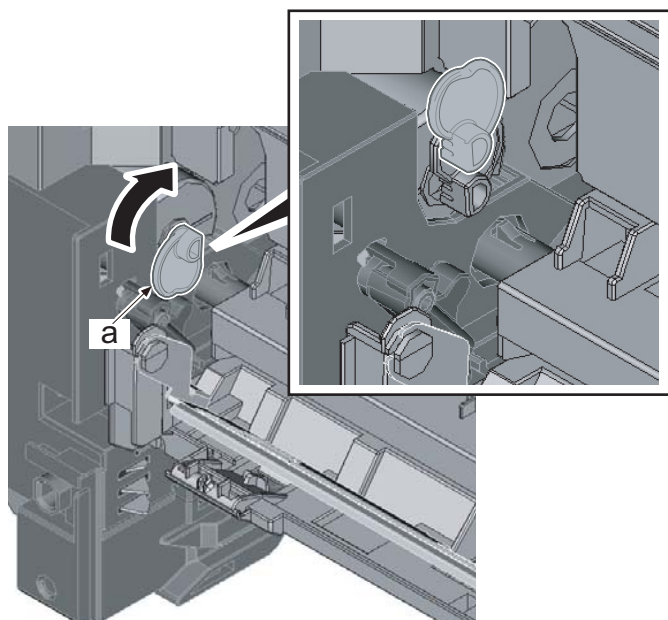


Figure 4-309

23. Disconnect eight connectors (b) from the engine relay PWB (a).

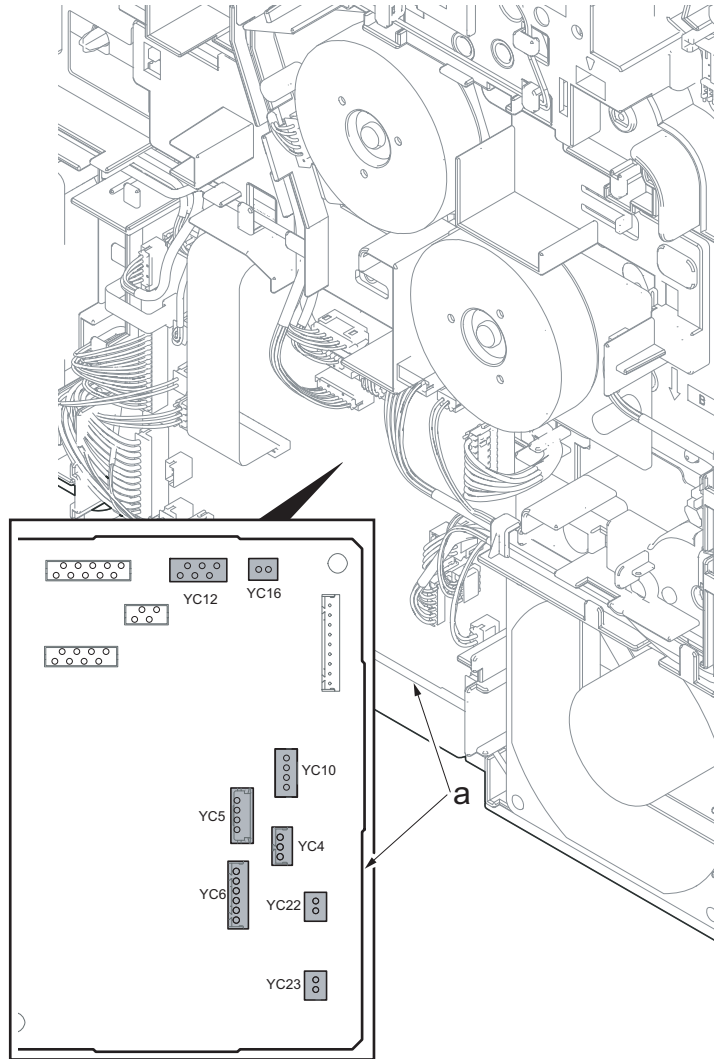


Figure 4-310

24. Release the wire (b) from five hooks (a).

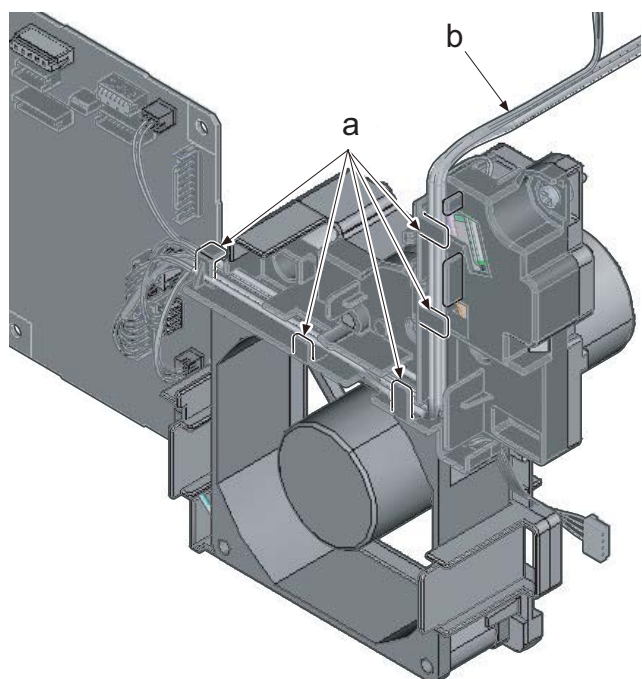


Figure 4-311



25. Remove two screws (a)(M3x12).
26. Lift up the MP paper feed drive unit (b) to release the lower two hooks (c).
27. Detach the MP paper feed drive unit (b).
28. Check the MP paper feed drive unit and clean or replace it if necessary.
29. Reattach the parts in the original position.

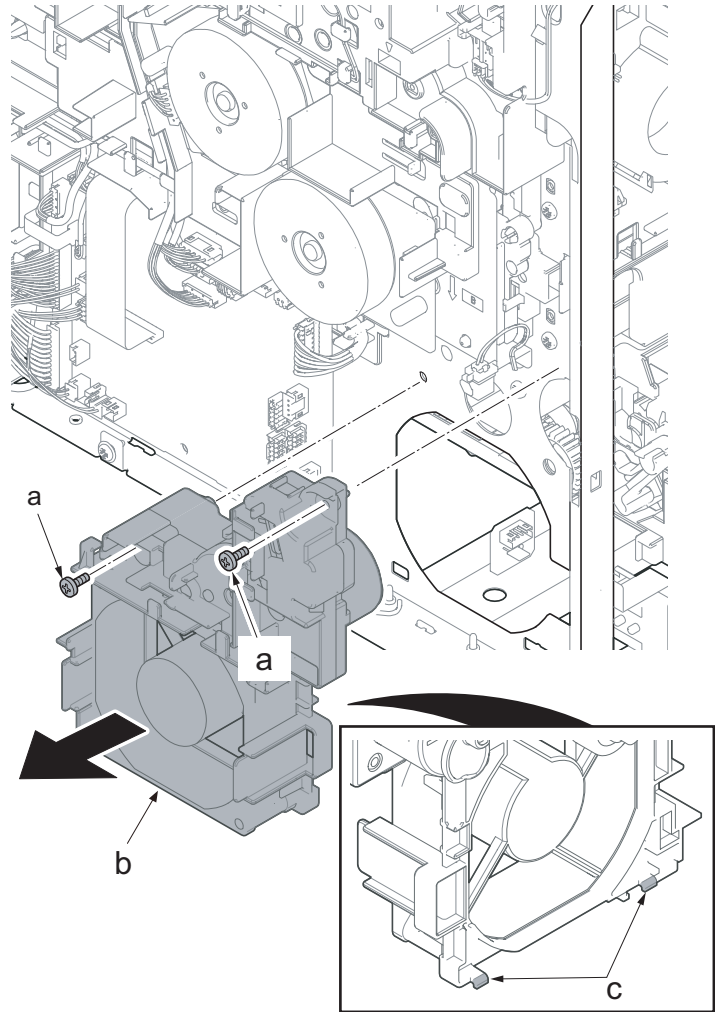


Figure 4-312

## (6-4) Detaching and reattaching the toner motor unit

1. Open the rear cover (a).

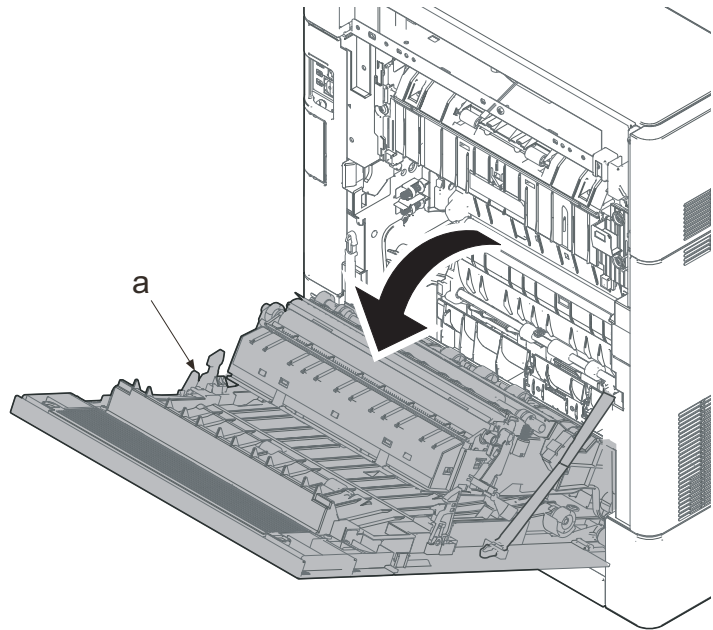


Figure 4-313

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

### IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

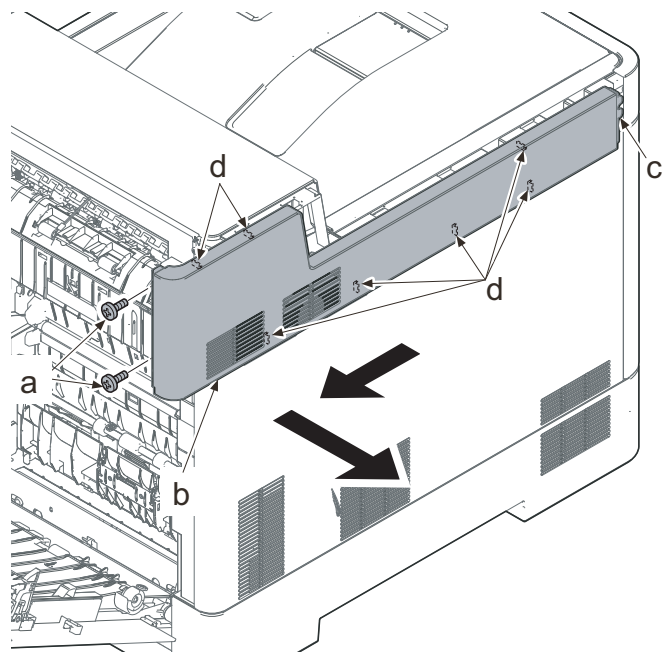


Figure 4-314



4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

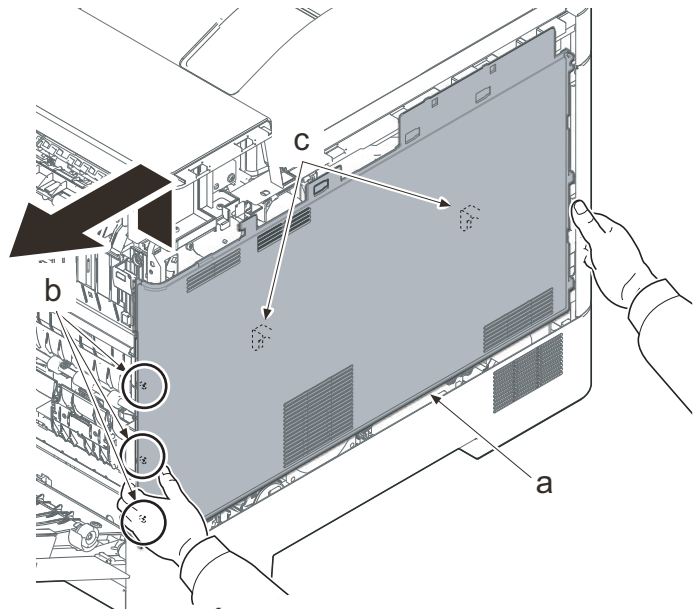


Figure 4-315

**IMPORTANT**

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). Slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

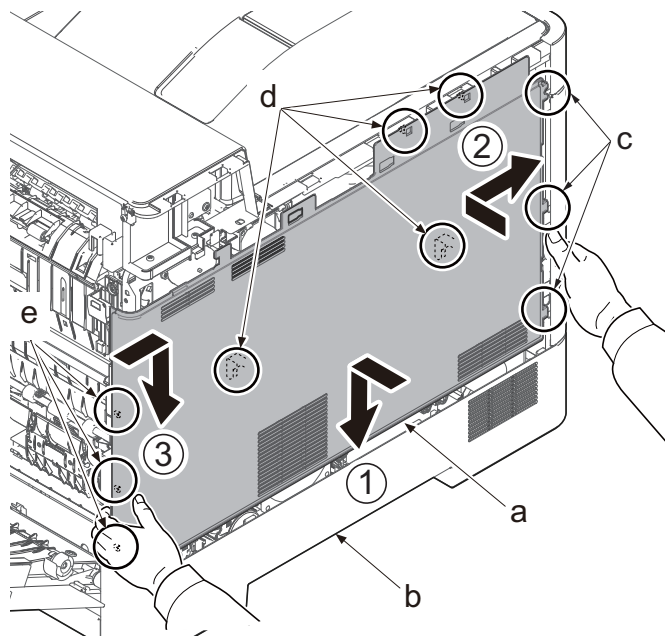


Figure 4-316

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

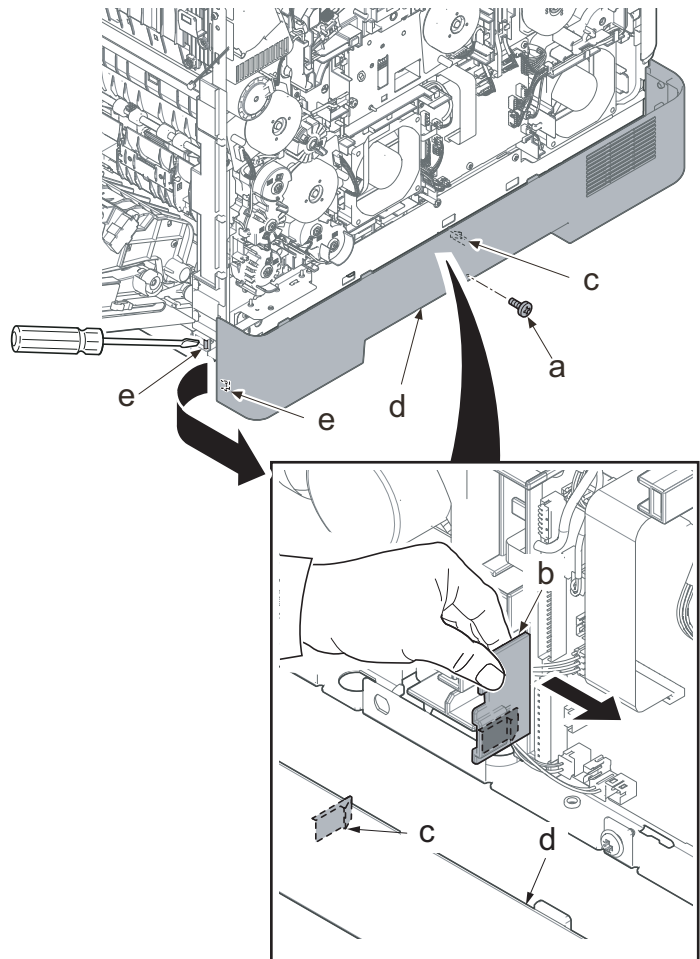


Figure 4-317

**IMPORTANT**

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, attach it with the screw.

Check if the hook at the center is surely fastened.

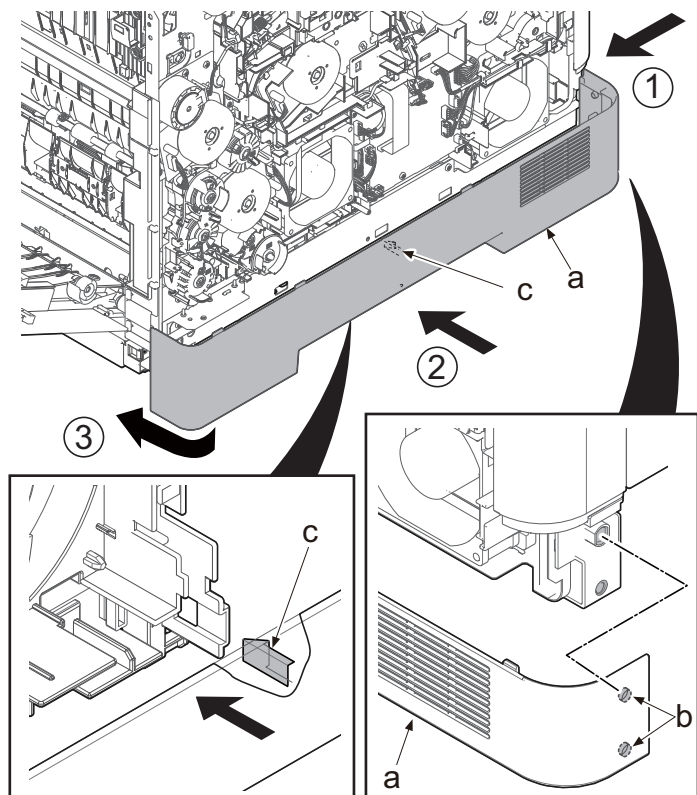


Figure 4-318

10. Detach the main drive motor unit (a).  
(See page 4-151)

11. Disconnect the connector (b) of the tray switch (a).
12. Release the wires of the exit motor (d) and the fuser motor (e) from three hooks (c).
13. Disconnect the connector (g) of the container fan motor (f).

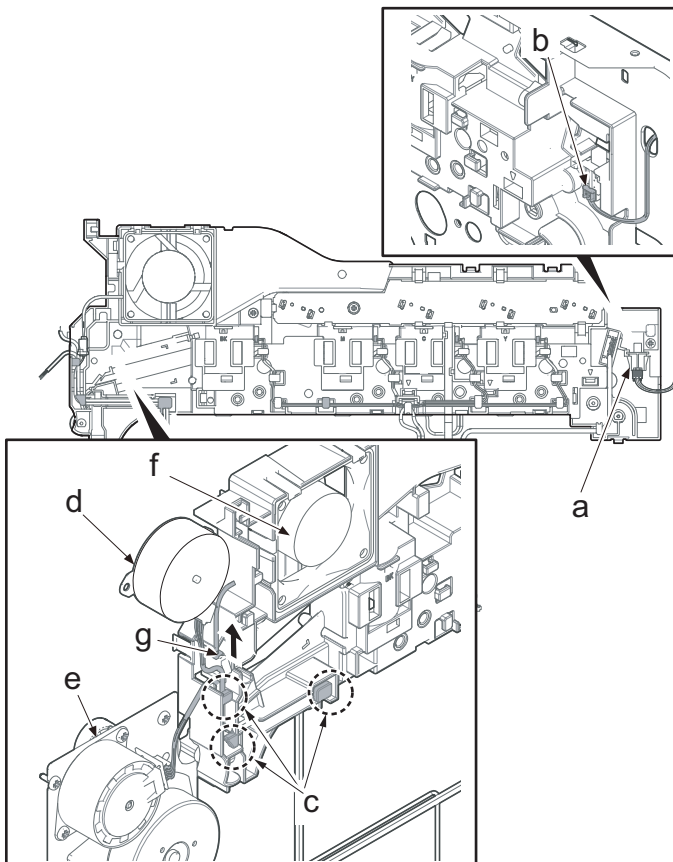


Figure 4-319

14. Release the wire from three hooks (b) of the toner motor unit (a).

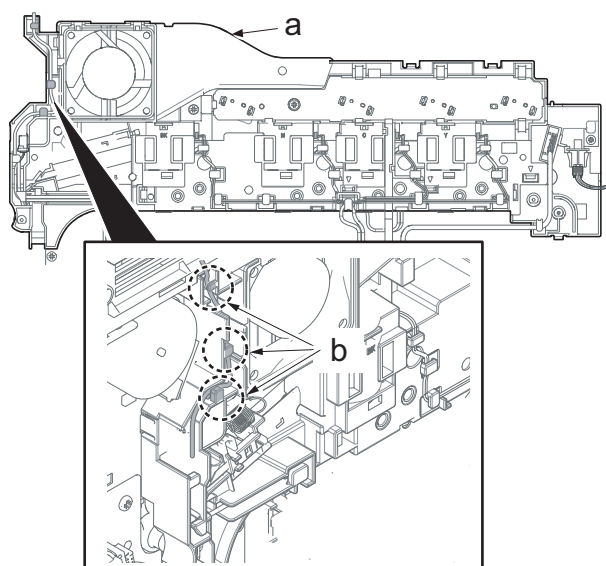


Figure 4-320

15. Release the hook (b) of the cleaner spring (a).

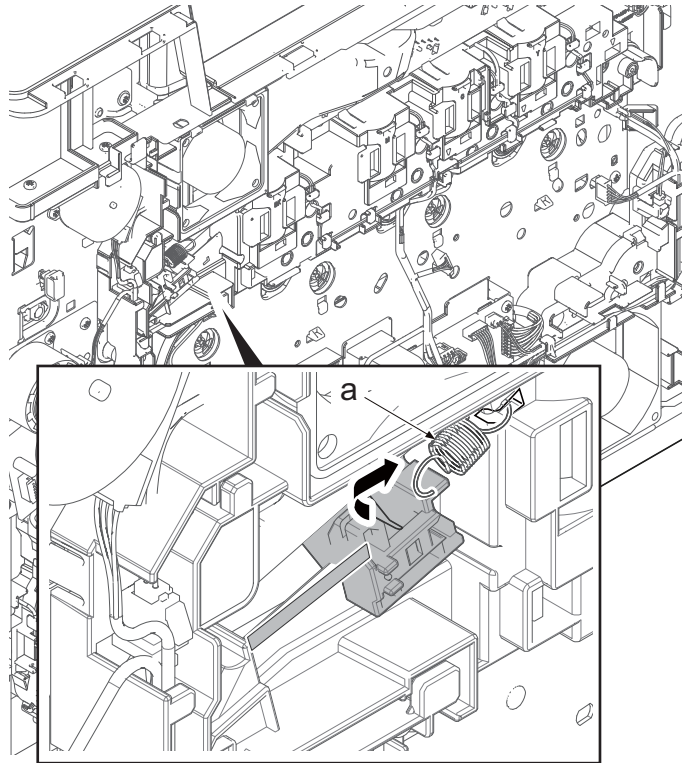


Figure 4-321

16. Open the top tray (b).

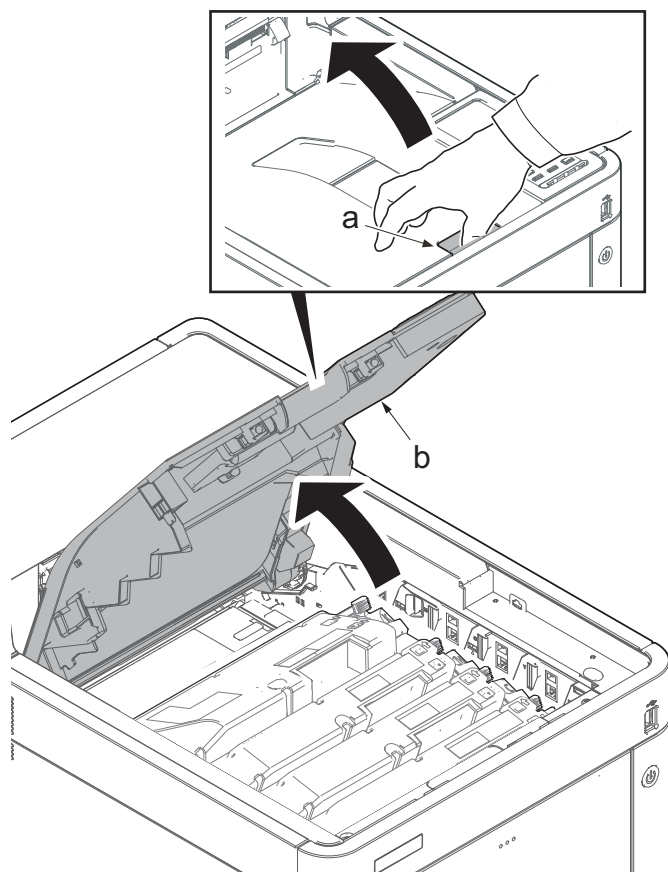


Figure 4-322

17. Relocate the cleaner slider (a) to the center of the rail (b).
18. Insert a flat-blade screwdriver (c) from the square hole.
19. Lift up the hook (d) to release.
20. Remove the cleaner slider (e) while rotating it.

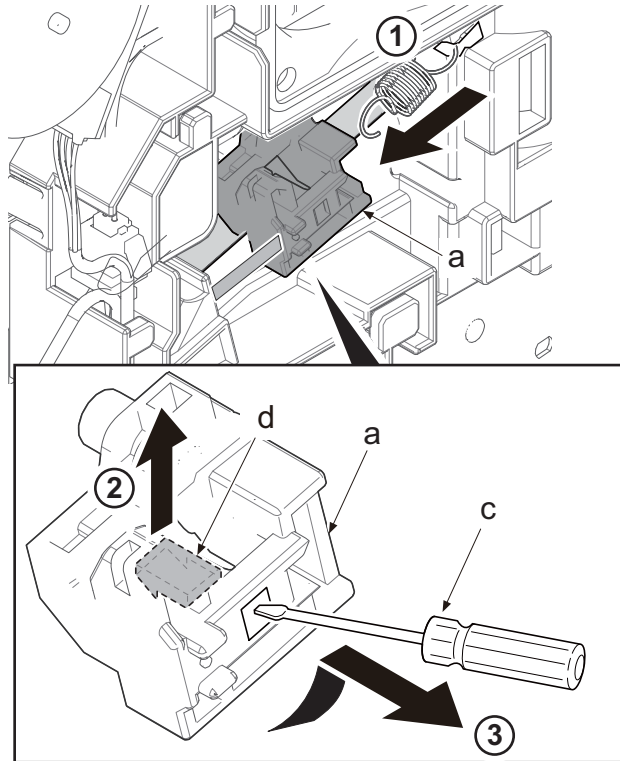


Figure 4-323

21. Remove the cleaner film (b) through the gap of the ribs (a).

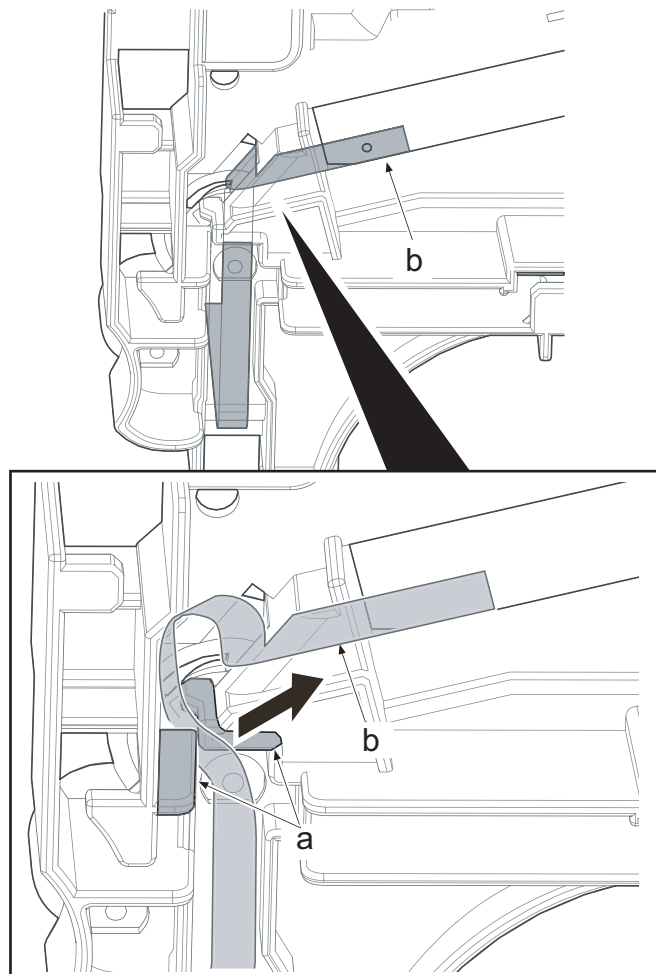


Figure 4-324

22. Remove four screws (b)(M3x8) from the toner motor unit (a).

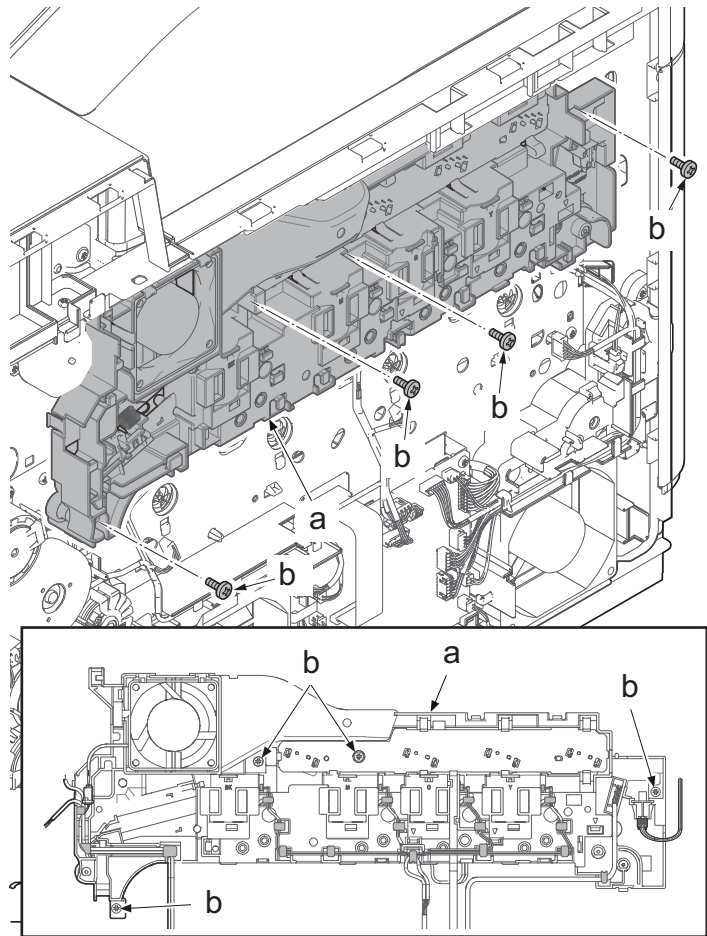


Figure 4-325



- 23. Release eight hooks (a).
- 24. Detach the toner motor unit (b).
- \*: Check the triangle engravings (c) as for the position of the three inside hooks.

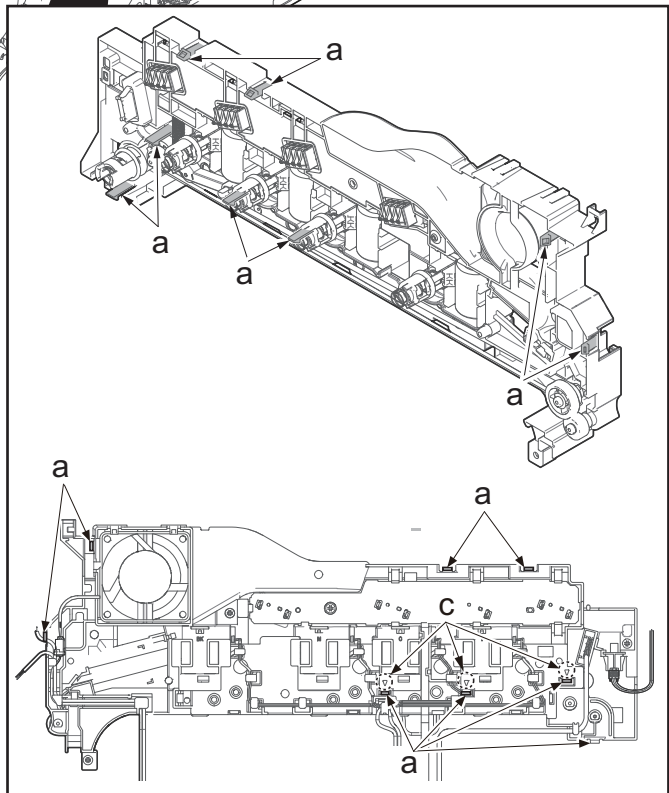
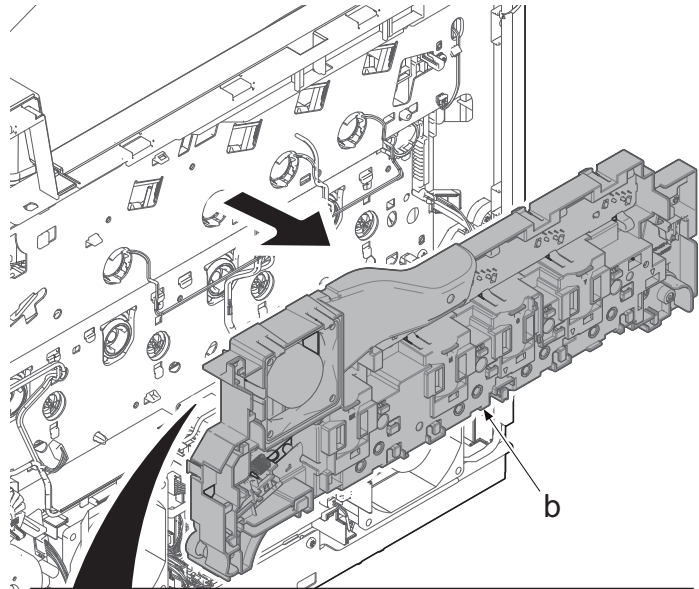


Figure 4-326

### (6-5) Detaching and reattaching the toner motor

1. Remove the tension spring (a).
- \*: Take care not to lose the spring.

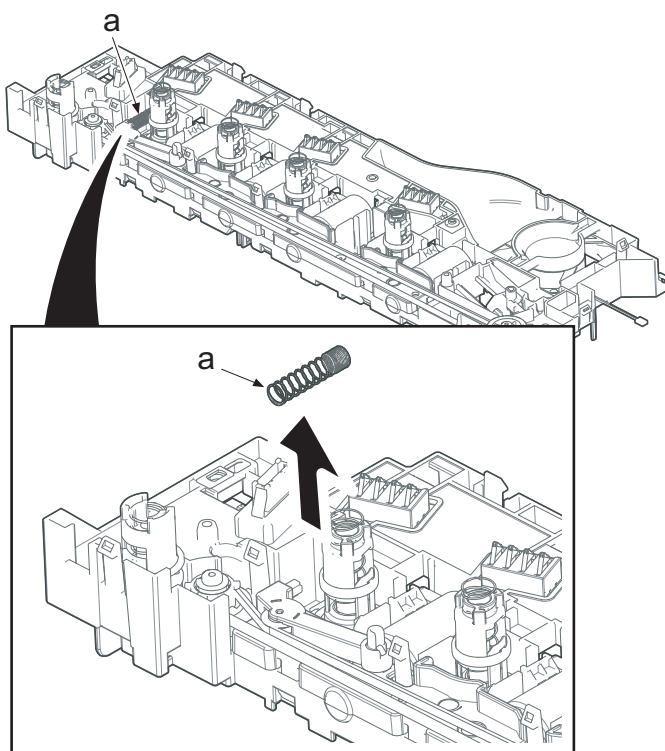


Figure 4-327

2. Release the tension arm (a) to loosen the tension..
3. Remove the belt (b).

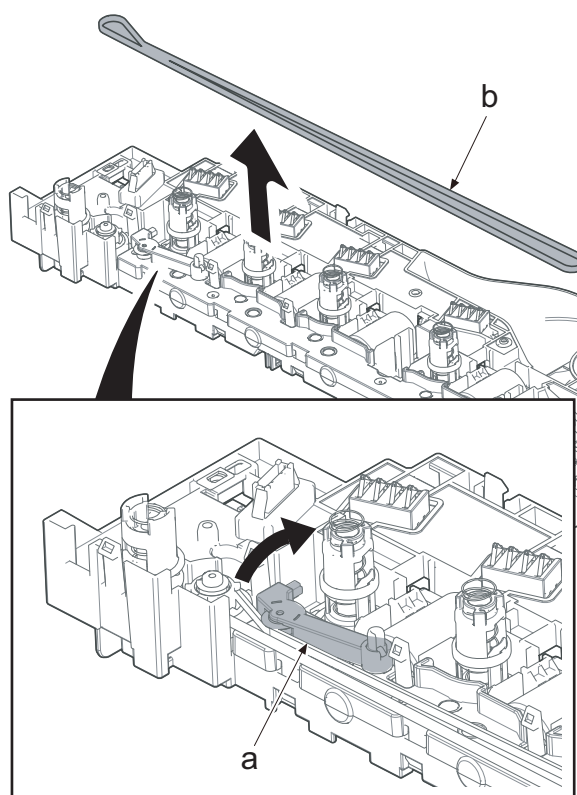


Figure 4-328



- 4. Release six hooks (a).
- 5. Remove the toner motor cover (b).

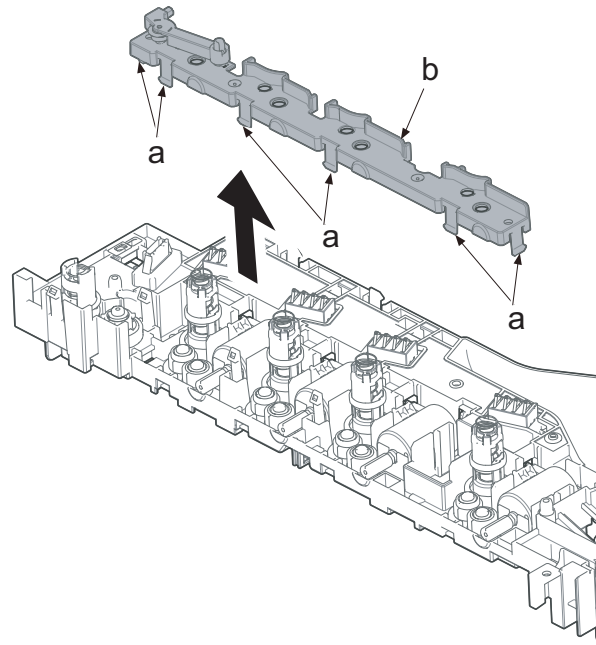


Figure 4-329

- 6. Disconnect the connector (a) of each toner motor.

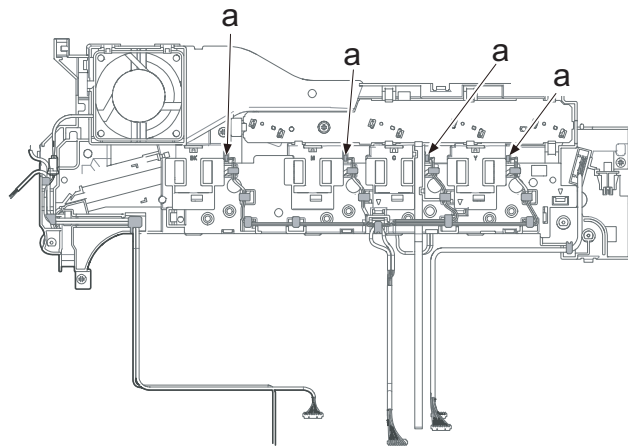


Figure 4-330

- 7. Release each set of two hooks (a).
- 8. Remove four toner motors (b).

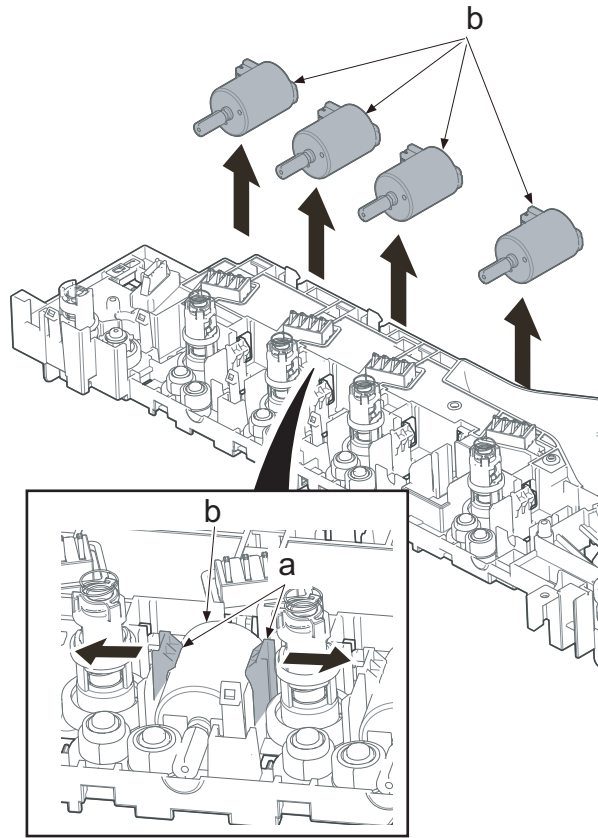
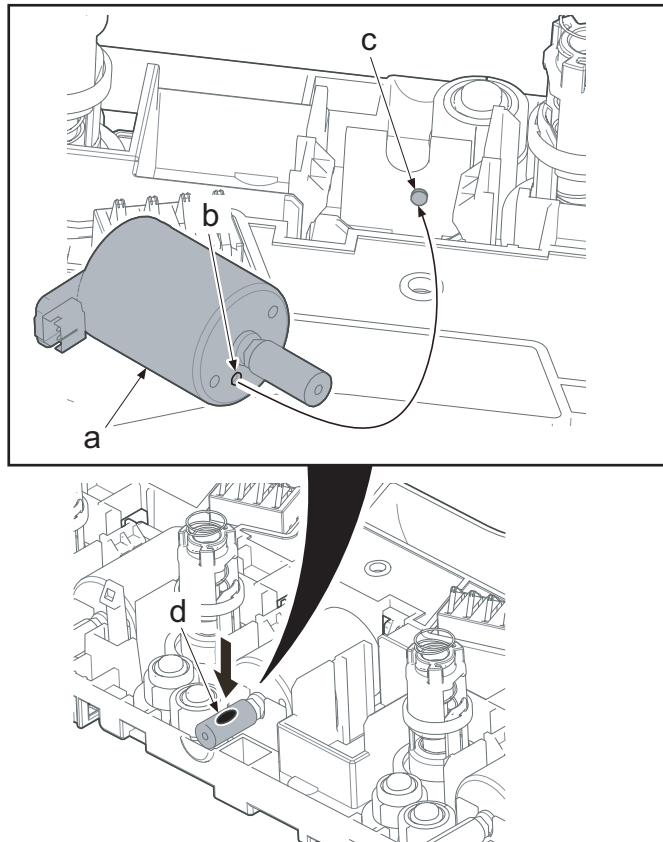


Figure 4-331

**IMPORTANT**

Apply one drop of grease (d) (EM-50LP) on the gear surface when attaching the new motor. Insert the boss (c) to the positioning hole (b) of the toner motor (a) and reattach it.

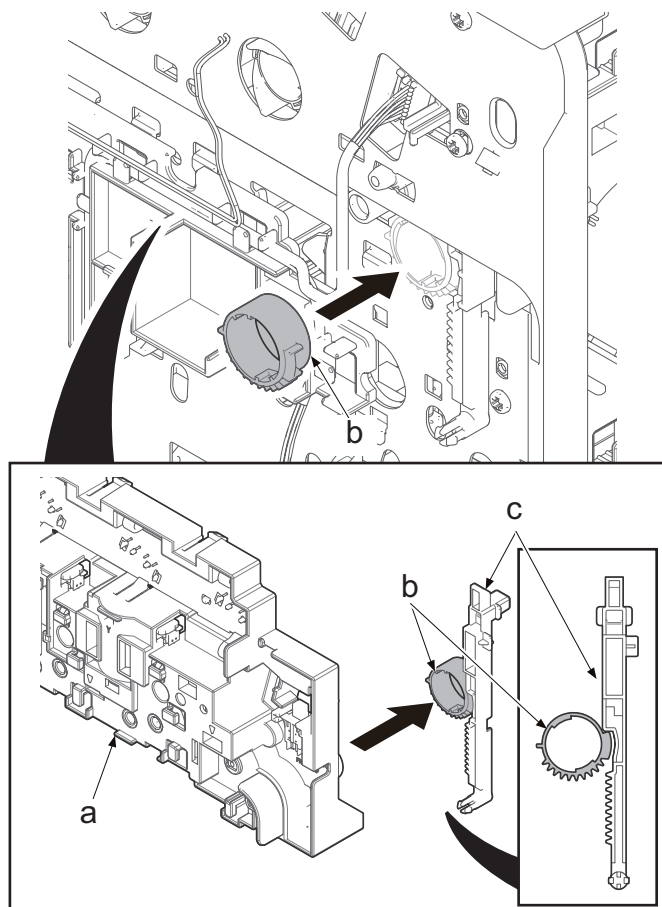


**Figure 4-332**

**IMPORTANT**

Reattach the drive cam (b) if coming off when reattaching the toner motor unit (a). Check if the drive cam (b) gear is meshed with the lock lever (c) gear when reattaching the toner motor unit (a).

\*: Drive can not be released without the drive cam.



**Figure 4-333**

## (6-6) Detaching and reattaching the lift motor

1. Open the rear cover (a).

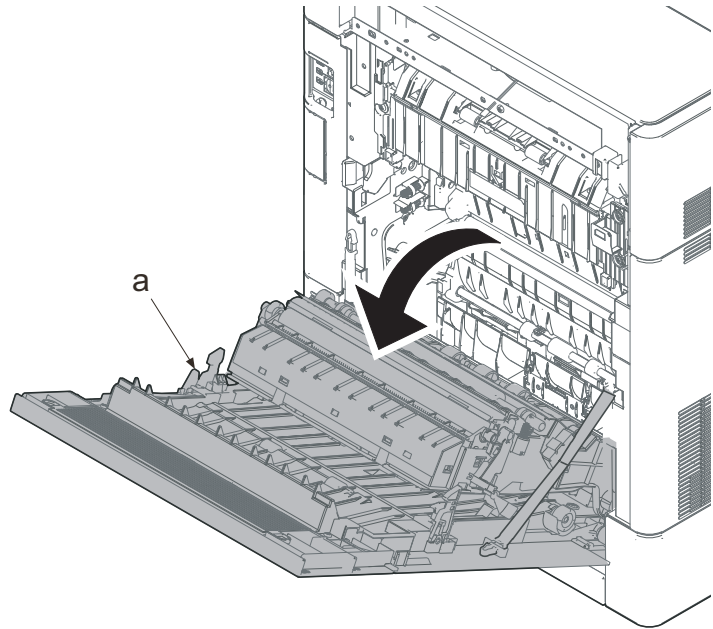


Figure 4-334

2. Remove two screws (a)(M3x8).
3. Slide the upper left cover (b) toward the machine rear side and detach it.

### IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

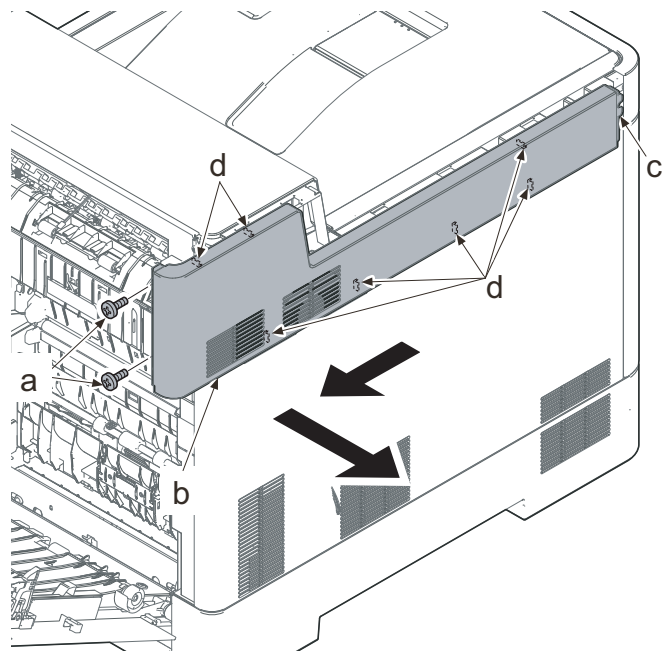


Figure 4-335

4. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
5. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
6. Detach the middle left cover (a).

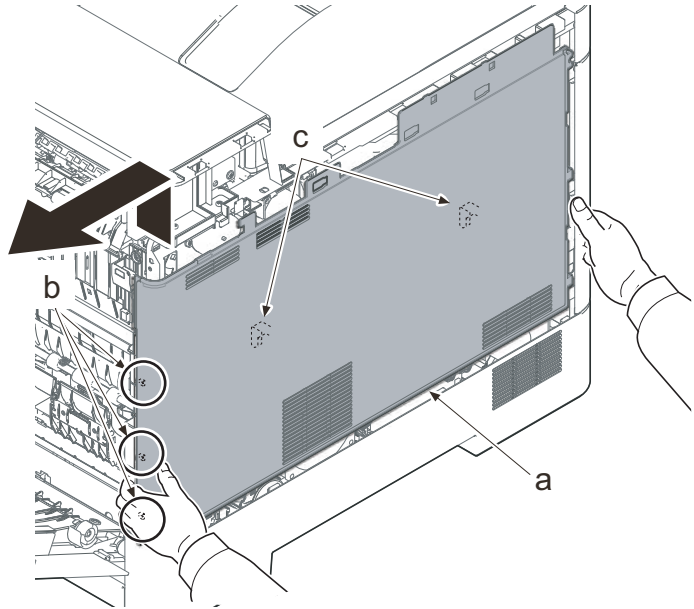


Figure 4-336

**IMPORTANT**

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). Slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

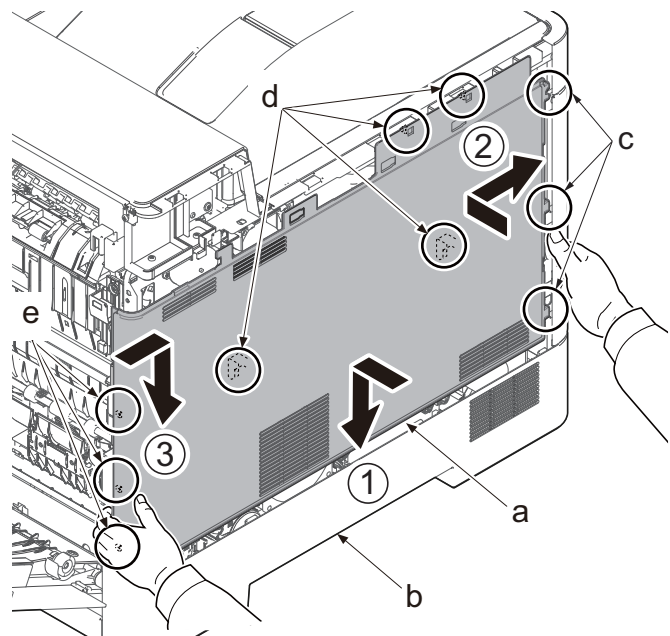


Figure 4-337

7. Remove the screw (a)(M3x8).
8. Pull the rib (b) toward you and release the center hook (c).
9. Detach the lower left cover (d).

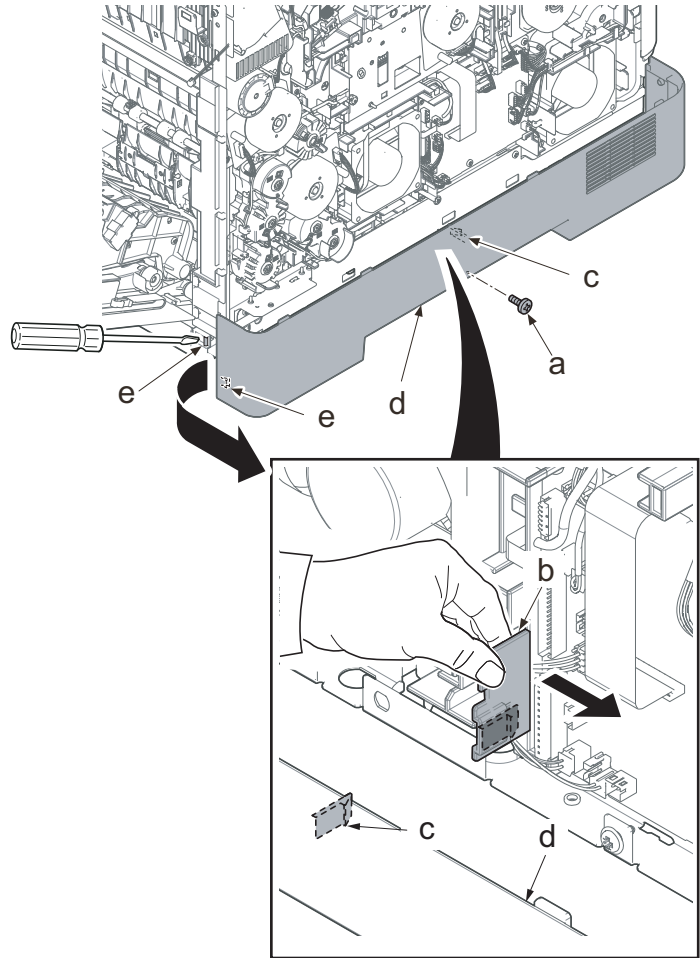


Figure 4-338

**IMPORTANT**

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, attach it with the screw.

Check if the hook at the center is surely fastened.

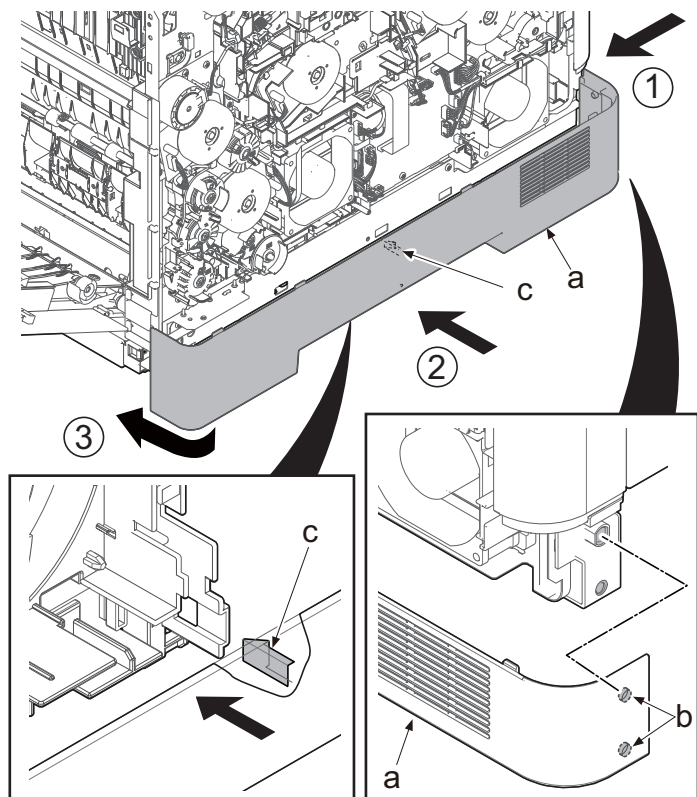


Figure 4-339

10. Disconnect all the connectors and FFCs from the engine relay PWB (a).  
30 ppm model: 23 connectors  
35/40 ppm model: 24 connectors  
YC27 is used only for 35/40 ppm model.

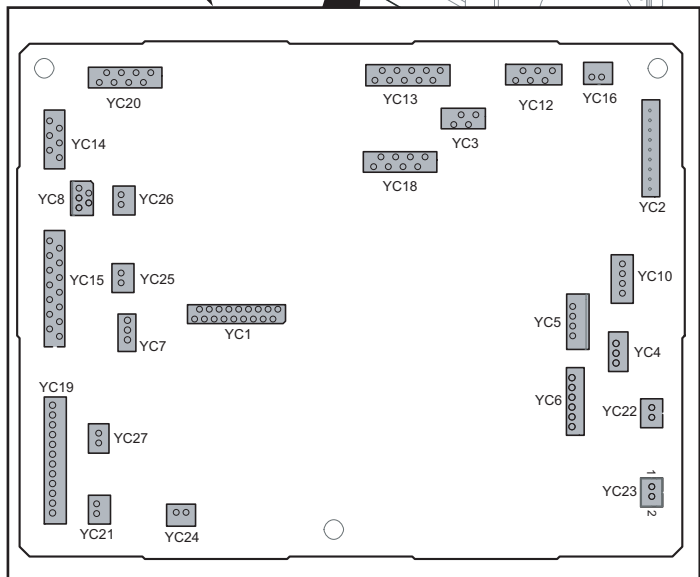
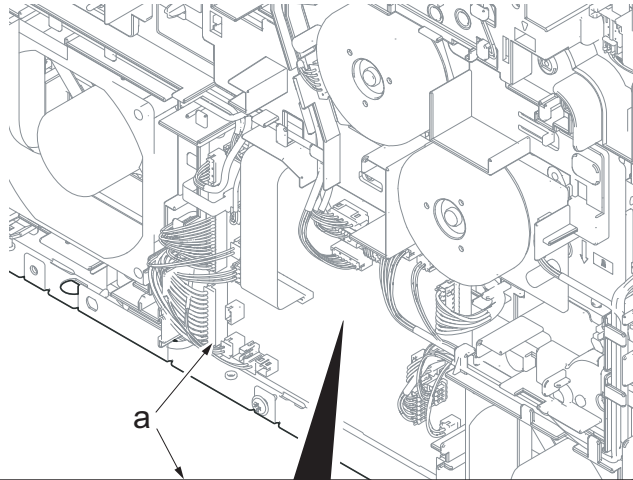


Figure 4-340

11. Remove three screws (a)(M3x8).
12. Detach the engine relay PWB (b).

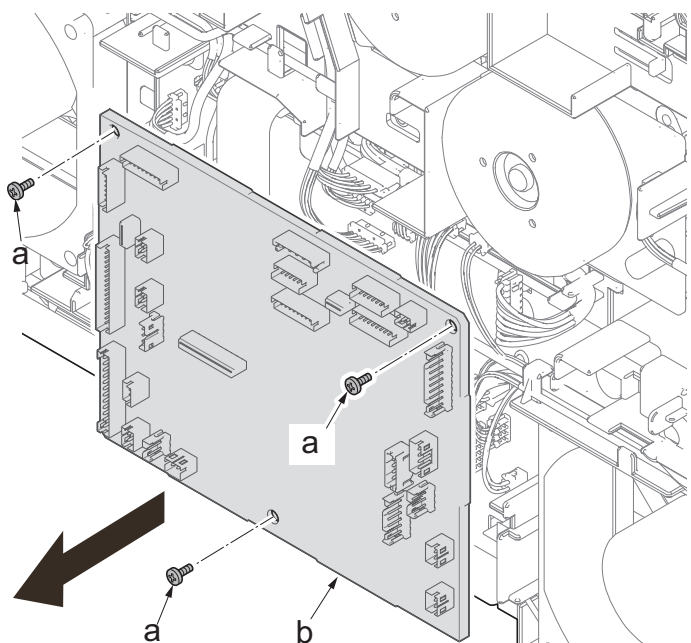
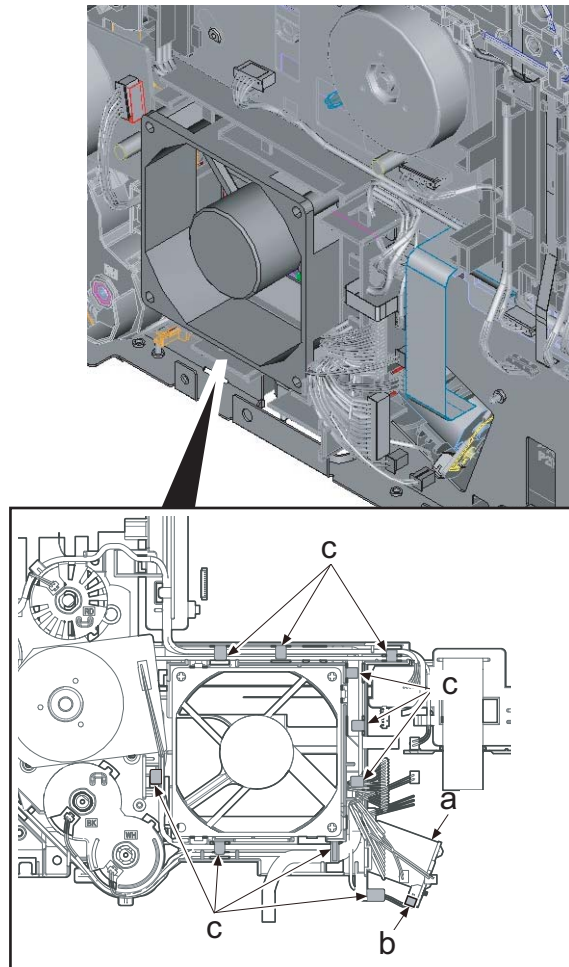


Figure 4-341



13. Disconnect the connector (b) of the lift motor (a).
14. Release the wire from ten hooks (c).



**Figure 4-342**



- 15. Release four hooks (a).
- 16. Remove the rear left duct (b).

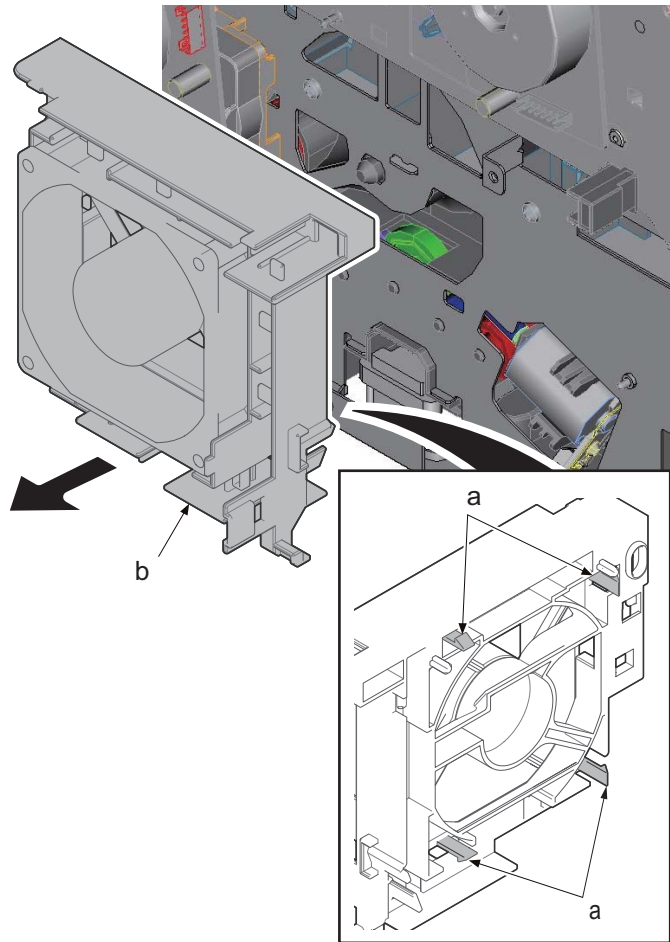


Figure 4-343

- 17. Release two hooks (a).
- 18. Remove the lift motor (b).
- 19. Check the paper feed drive unit and clean or replace it if necessary.
- 20. Reattach the parts in the original position.

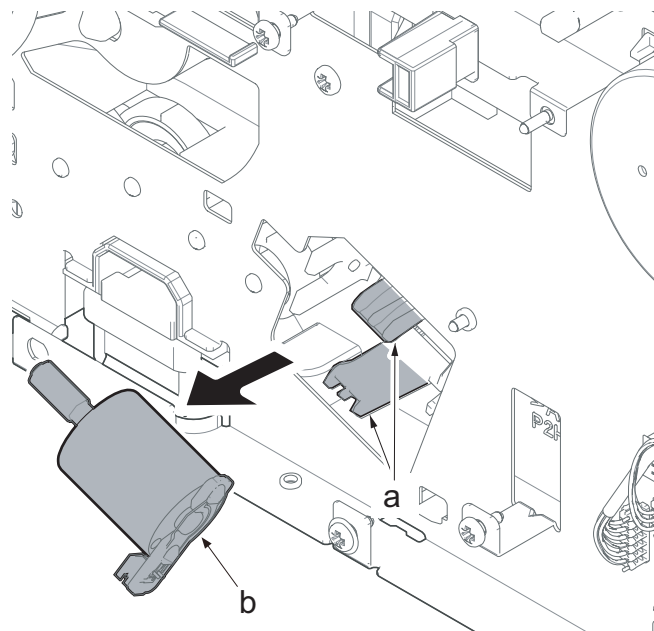
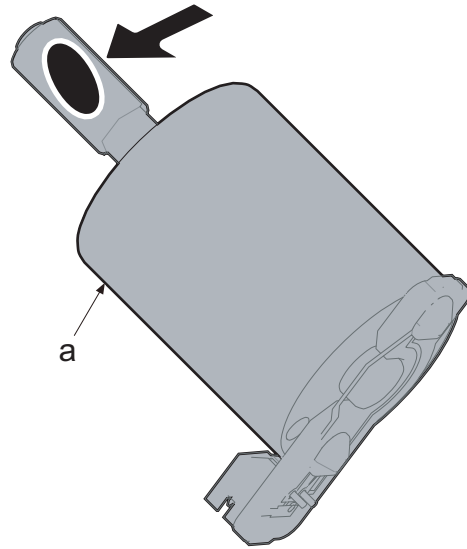


Figure 4-344

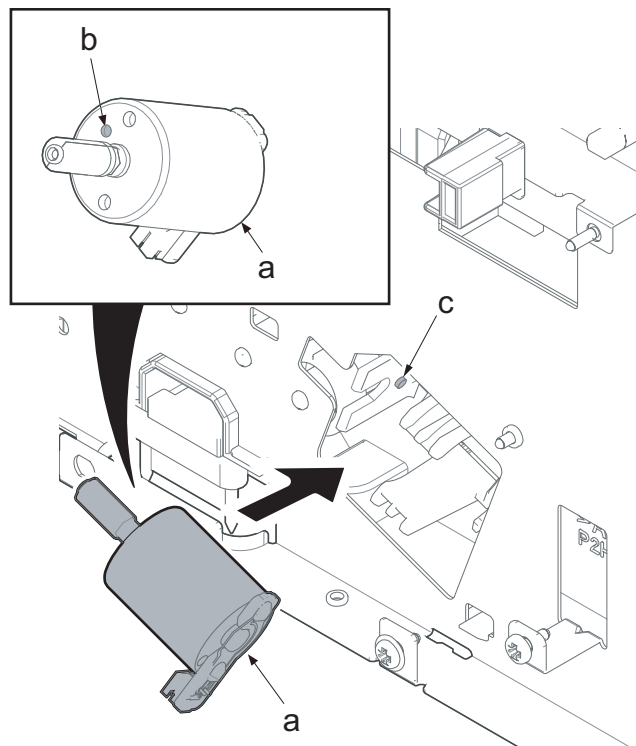
**IMPORTANT**

Apply one drop of grease (EM-50LP) on the gear surface when attaching the new lift motor (a).



**Figure 4-345**

Insert the boss (c) to the positioning hole (b) of the lift motor (a) and reattach it.



**Figure 4-346**

Attach the lift motor (a) after confirming it is not run over the rib (b).

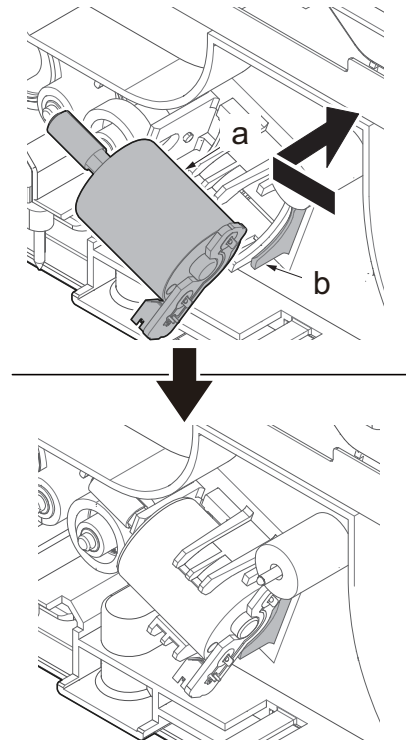


Figure 4-347

## (6 - 7) Detaching and reattaching the cassette lift unit

1. Pull out the cassette (a).

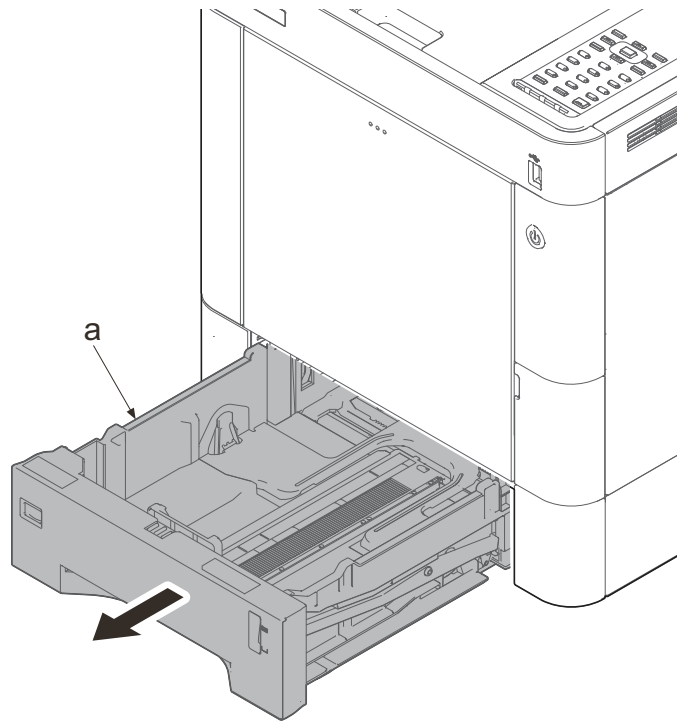


Figure 4-348

2. Lower the release lever (a).
3. Open the lower MP paper conveying unit (b).

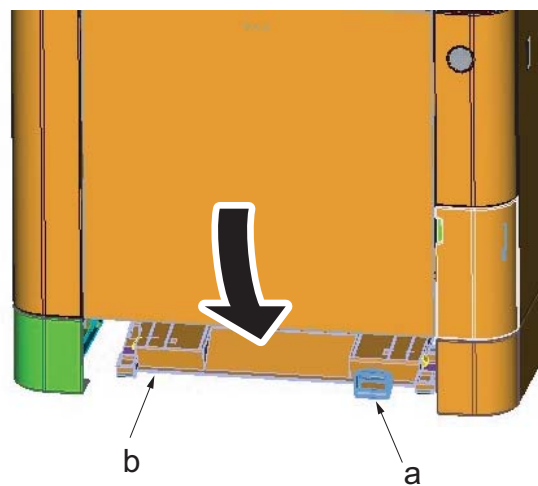


Figure 4-349

- 4. Pull the lever (a).
- 5. Open the top tray (b).

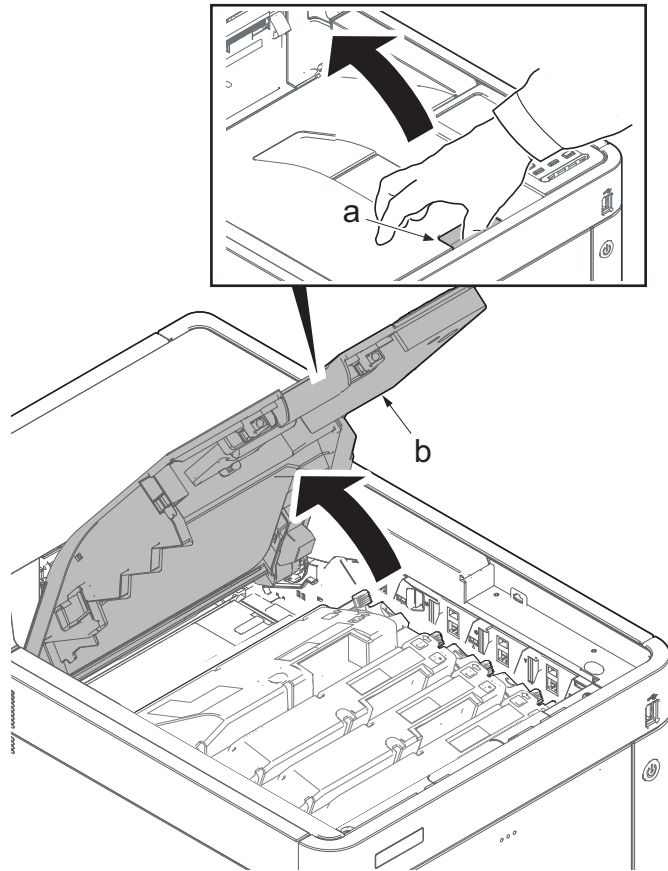


Figure 4-350

- 6. Open the MP tray (a).
- 7. Remove two screws (b)(M3x8).
- 8. Open the waste toner cover (c).

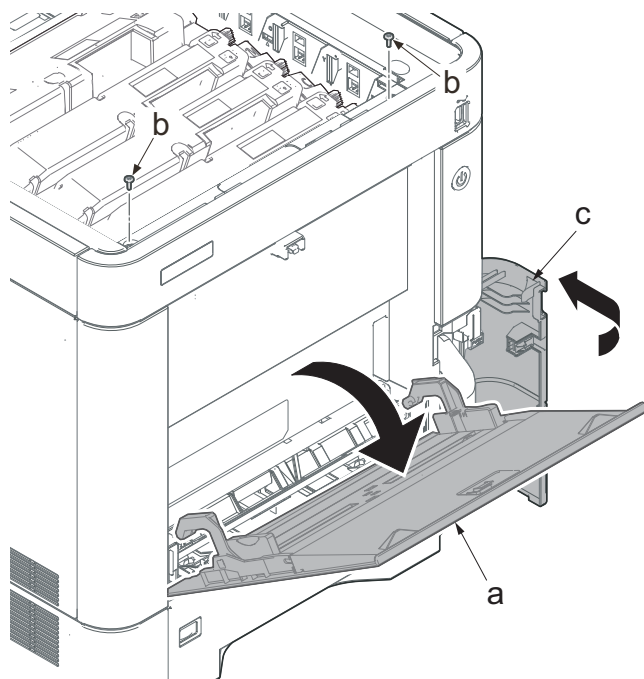


Figure 4-351

9. Slightly lift up the front cover (a) to release the boss (b).
10. Tilt the front cover (a) toward the machine front side.
11. Then, remove the front cover (a) by lifting it up.

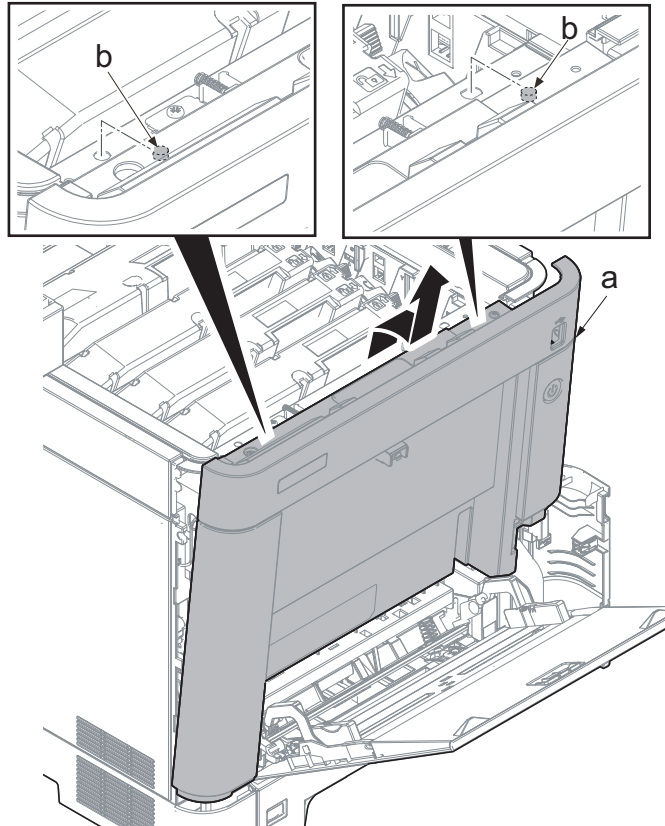


Figure 4-352

**IMPORTANT**

Make sure not to touch the waste toner cover sensor (b) when reattaching the front cover (a). If the waste toner cover sensor (b) comes off, even if you close the waste toner cover, "cover open" will be displayed.

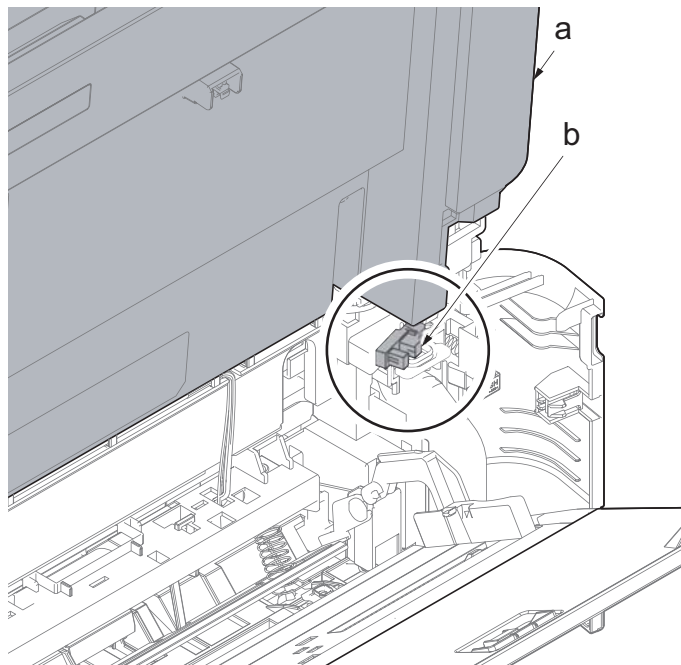


Figure 4-353

12. Open the MP tray (a) slightly.
13. Lift up the MP tray cover (b) and release two hooks (c).

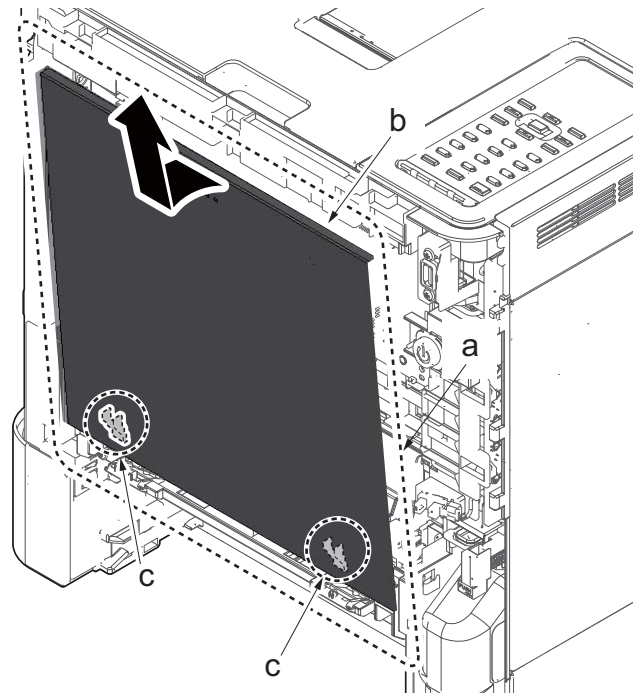


Figure 4-354

14. Fully open the MP tray (a).
15. Slide the arm (b) to the machine rear side and lift it up to remove.

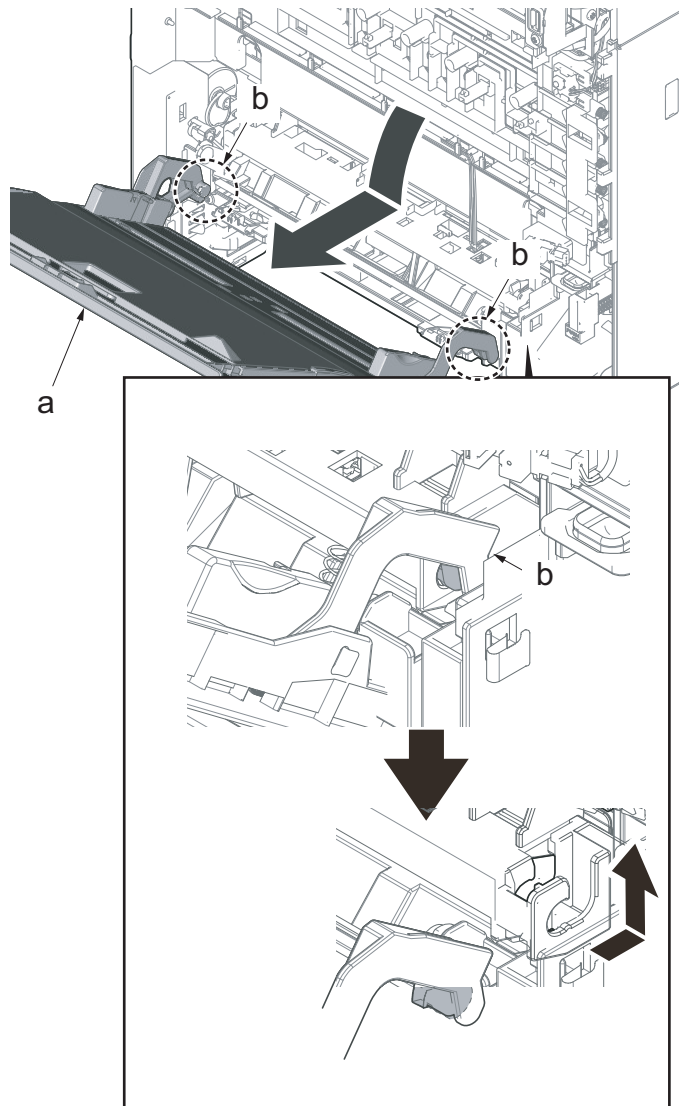


Figure 4-355

16. Remove two screws (a)(M3x8).
17. Detach the lower MP paper feed unit (b).

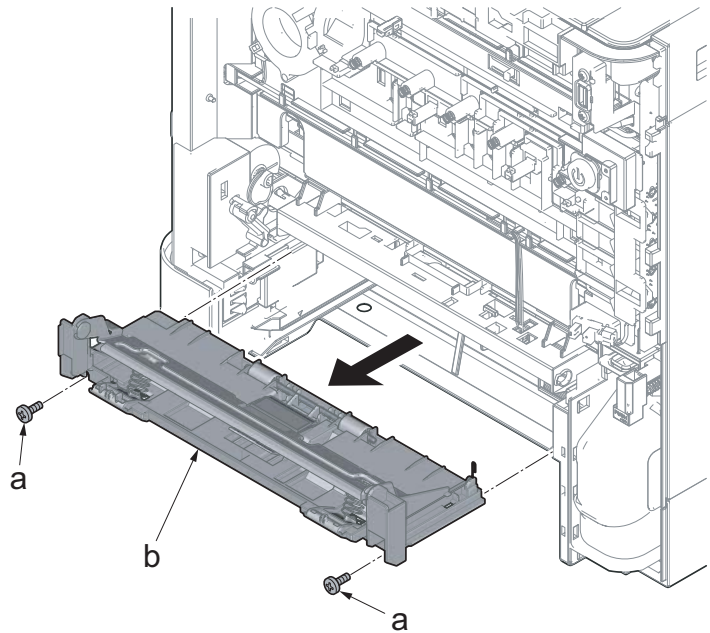


Figure 4-356

**IMPORTANT**

Lower the MP lift plate (b) so that the lever (c) is on it when reattaching the lower MP paper feed unit (a).

\*: The paper is not fed because the MP lift plate (b) cannot ascend and descend when it is not in the correct position.

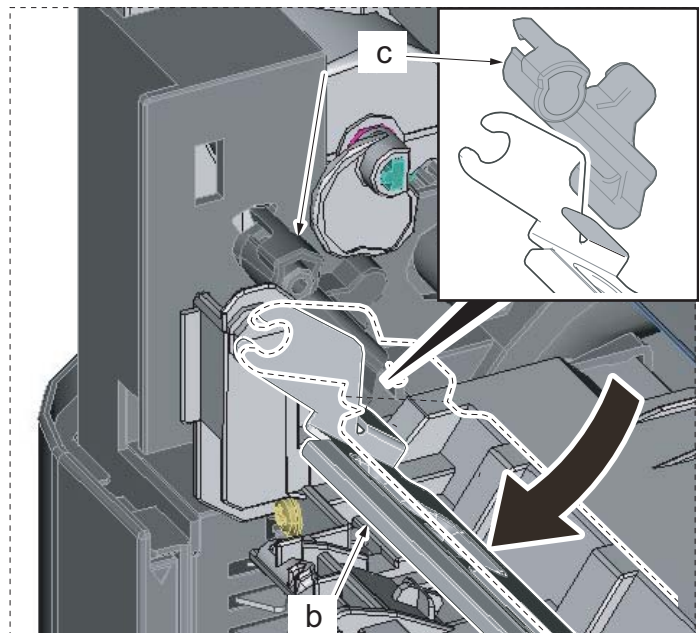


Figure 4-357



18. Pull the hook (a) toward the machine front side.
19. Slide the MP paper feed shaft (b).
20. Remove the MP paper feed roller (c).

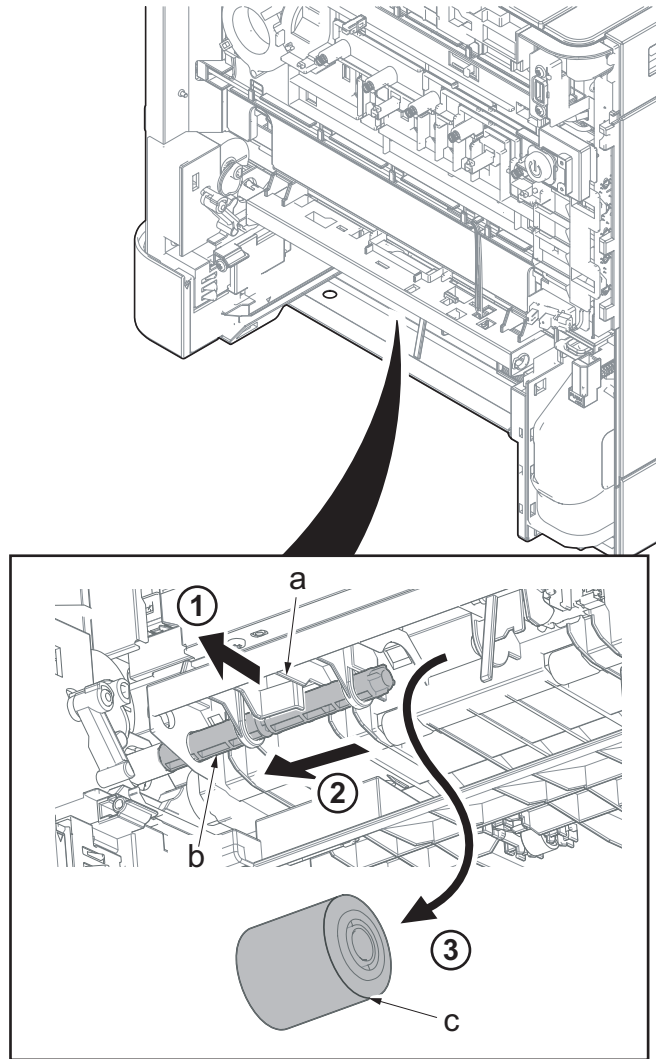


Figure 4-358

**IMPORTANT**

When reattaching the MP paper feed roller (a), be aware of the attachment direction.

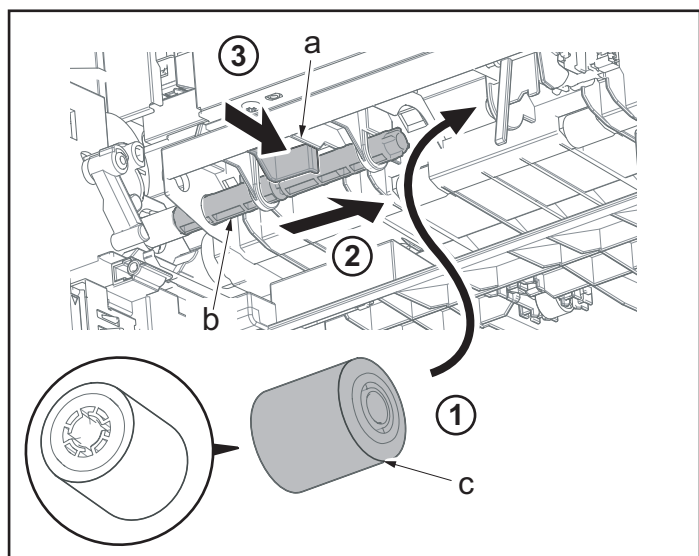


Figure 4-359

### Detaching and reattaching the MP tray paper conveying unit

21. Pull the hook (b) toward the machine front side.
22. Slide the MP paper feed shaft (c).
23. Pull the MP paper feed shaft (c) out from the drive joint (d).

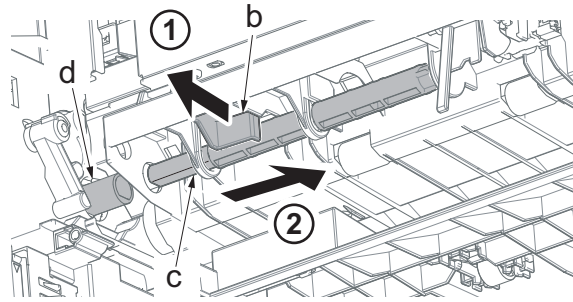


Figure 4-360

24. Open the rear cover (a).

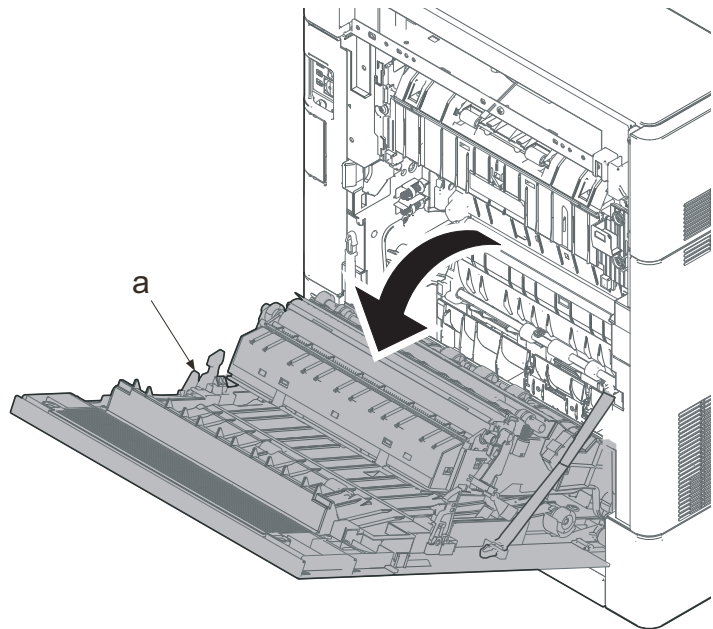


Figure 4-361

25. Remove two screws (a)(M3x8).
26. Slide the upper left cover (b) toward the machine rear side and detach it.

### IMPORTANT

When reattaching the upper left cover (b), insert the hook (c) to the machine front side, and then fasten seven hooks (d) by sliding it toward the machine front side.

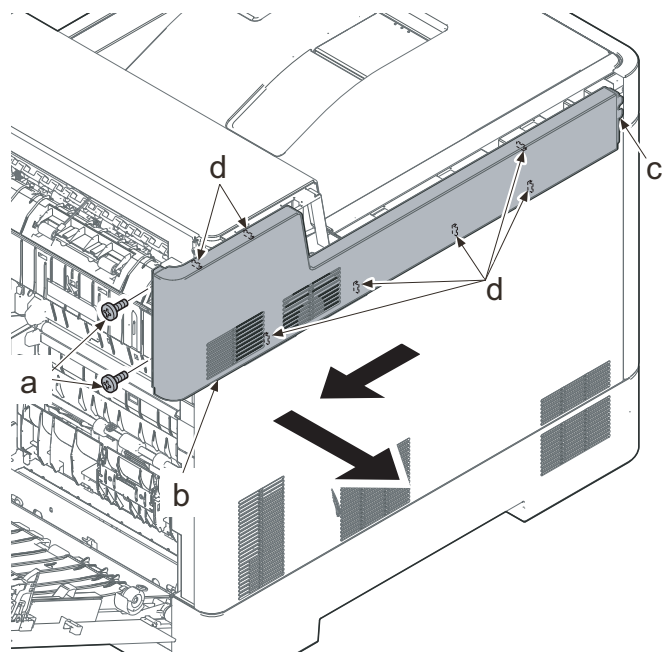


Figure 4-362

27. Lift up the machine rear side of the middle left cover (a) to release three hooks (b).
28. Slide the middle left cover (a) toward the machine rear side to release two hooks (c).
29. Detach the middle left cover (a).

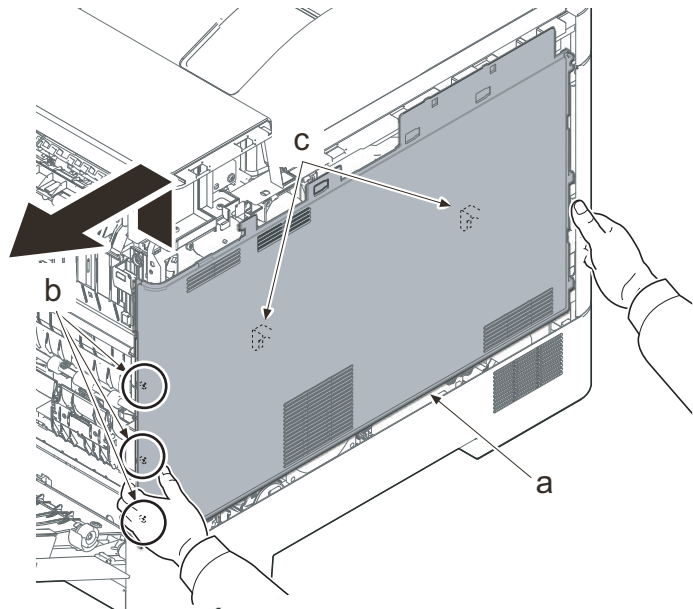


Figure 4-363

**IMPORTANT**

When reattaching the middle left cover (a), insert the lower rib into the lower left cover (b). Slide it toward the machine front side to fasten three hooks (c) and four hooks (d), then lower the machine rear side of it to fasten three hooks (e) at the machine rear side.

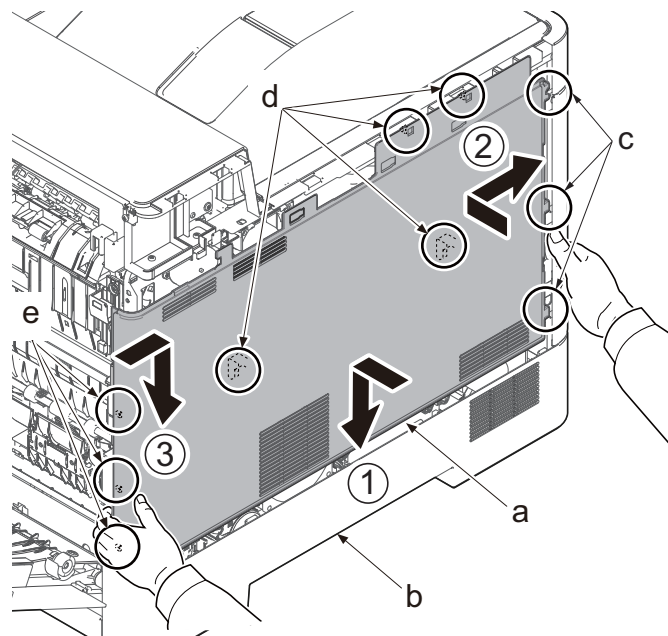


Figure 4-364

30. Remove the screw (a)(M3x8).
31. Pull the rib (b) toward the machine front side and release the center hook (c).
32. Release the hook (c) using a flat-blade screwdriver.
33. Detach the lower left cover (d).

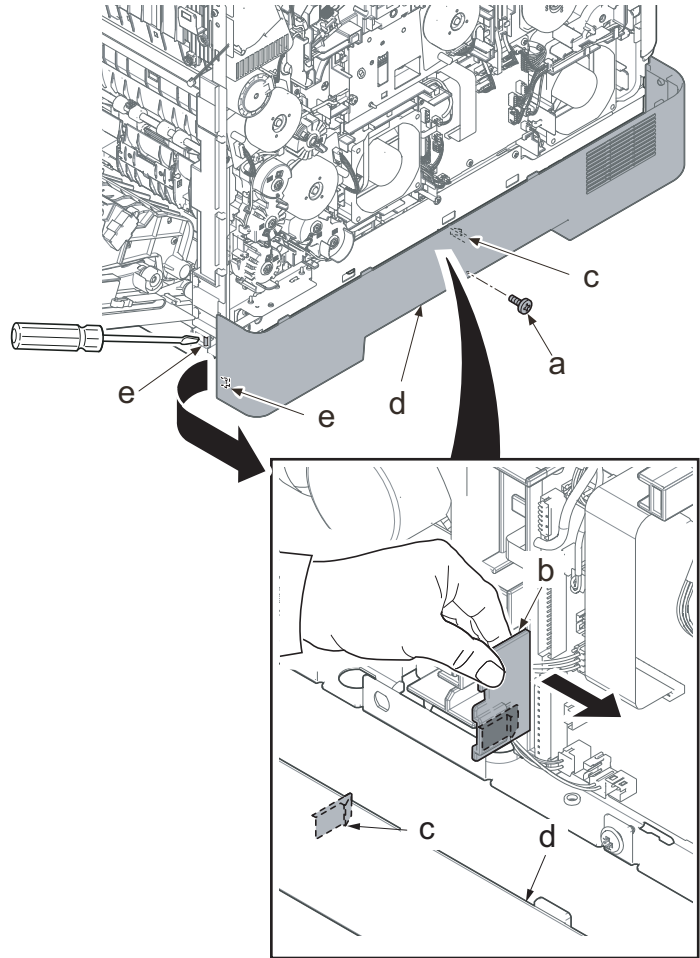


Figure 4-365

**IMPORTANT**

When attaching the lower left cover (a), insert two bosses (b) at the machine front side into the holes and apply the center hook (c). Then, attach it with the screw.

Check if the hook at the center is surely fastened.

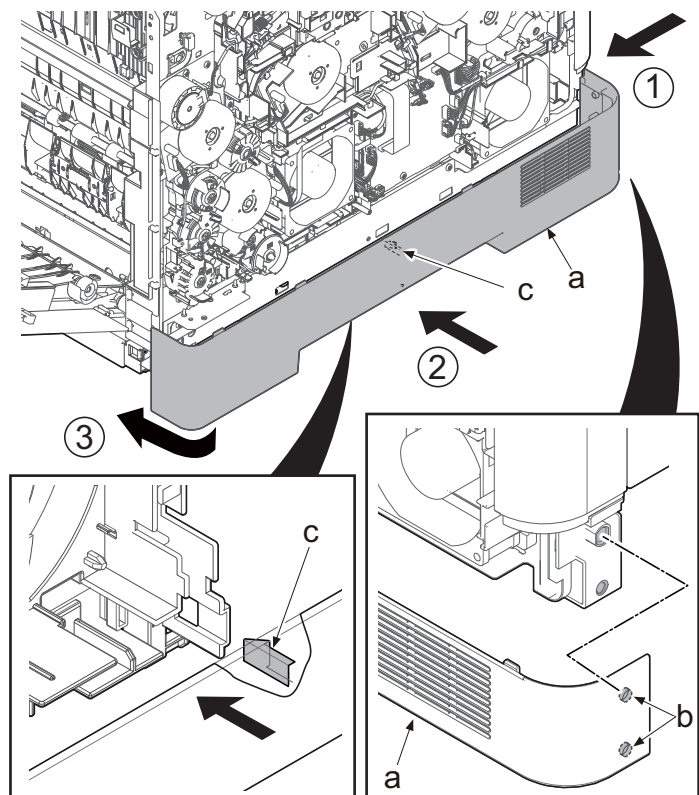


Figure 4-366

34. Disconnect the connector (b) (YC6) from the engine relay PWB (a).
35. Release the wire from eight hooks (c).

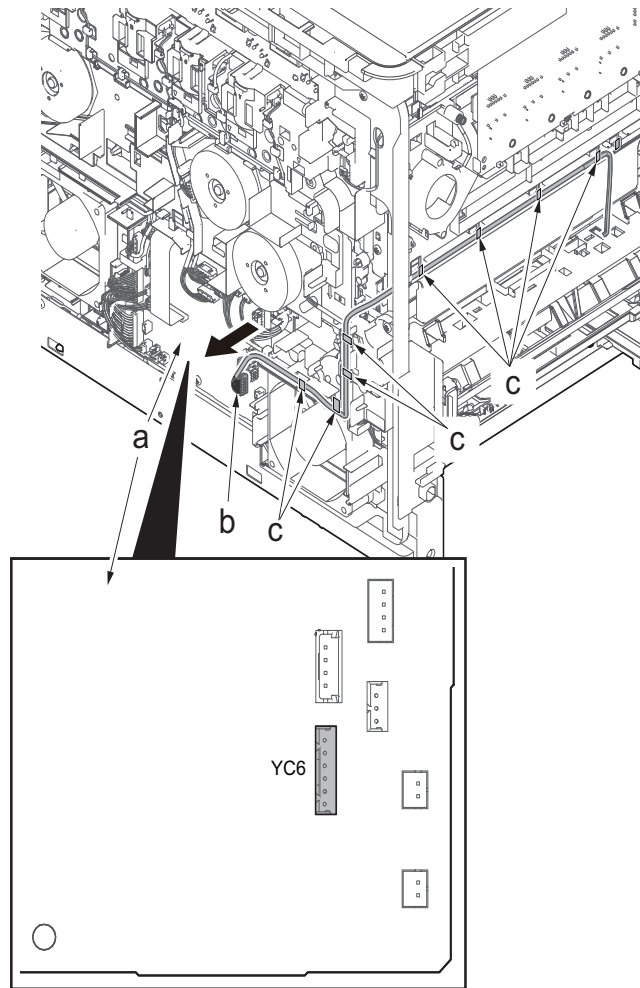


Figure 4-367

36. Remove two screws (a)(M3x8).
37. Detach the MP conveying unit (b) by pulling it toward the machine front side.

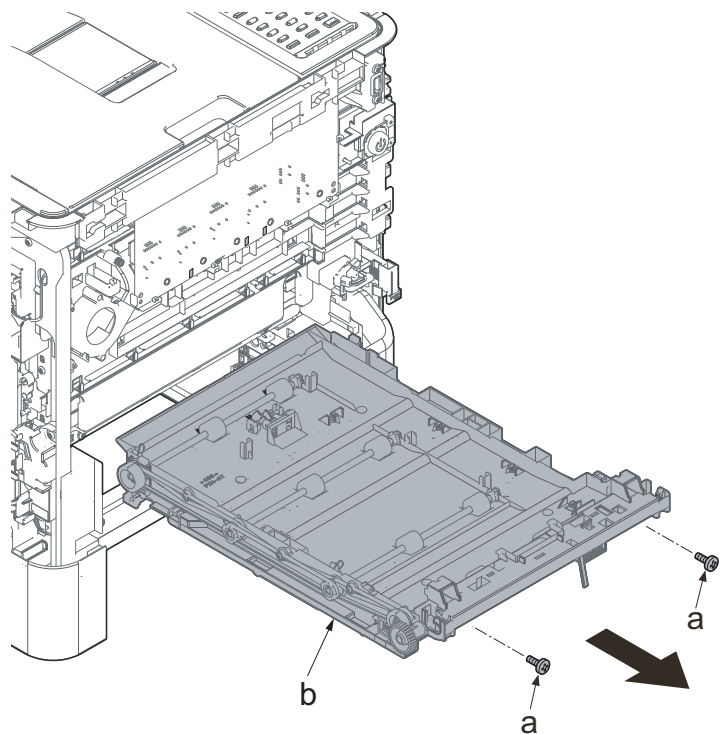
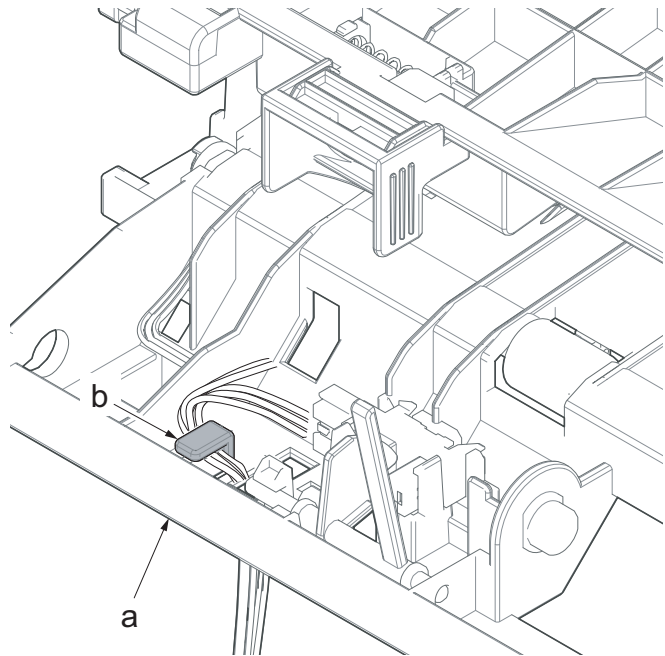


Figure 4-368



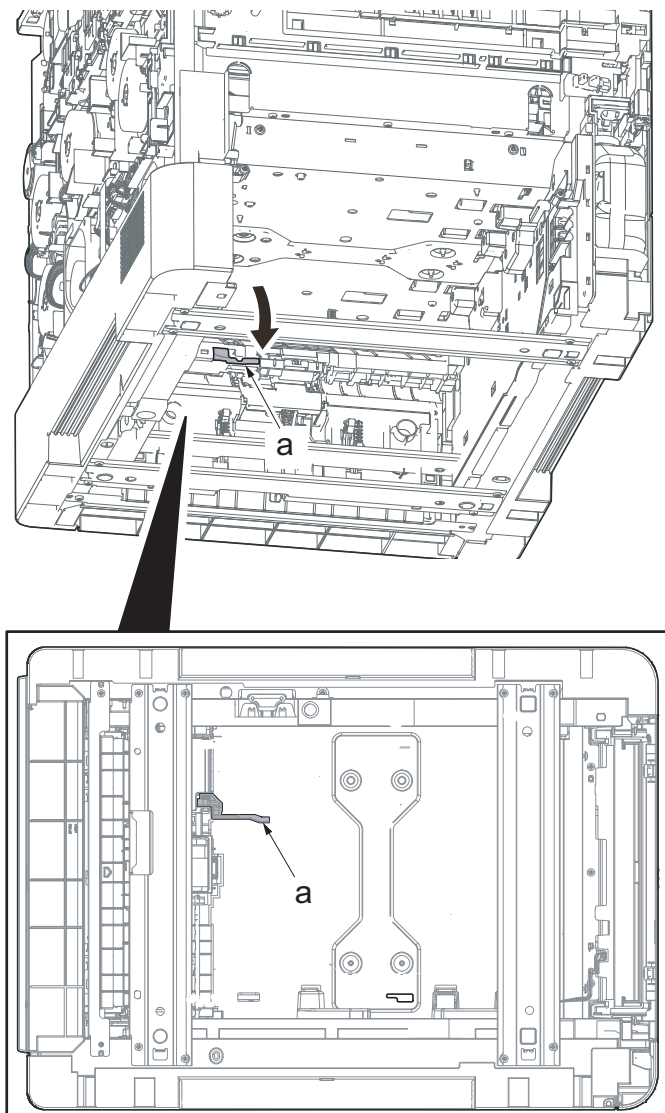
**IMPORTANT**

Check if the wire is fastened to the hook (b) before reattaching the MP conveying unit (a).



**Figure 4-369**

Lower the actuator (b) of the paper sensor before reattaching the MP conveying unit (a).



**Figure 4-370**

First apply the positioning (c) to the cutout at the left and right side and then secure the screw.

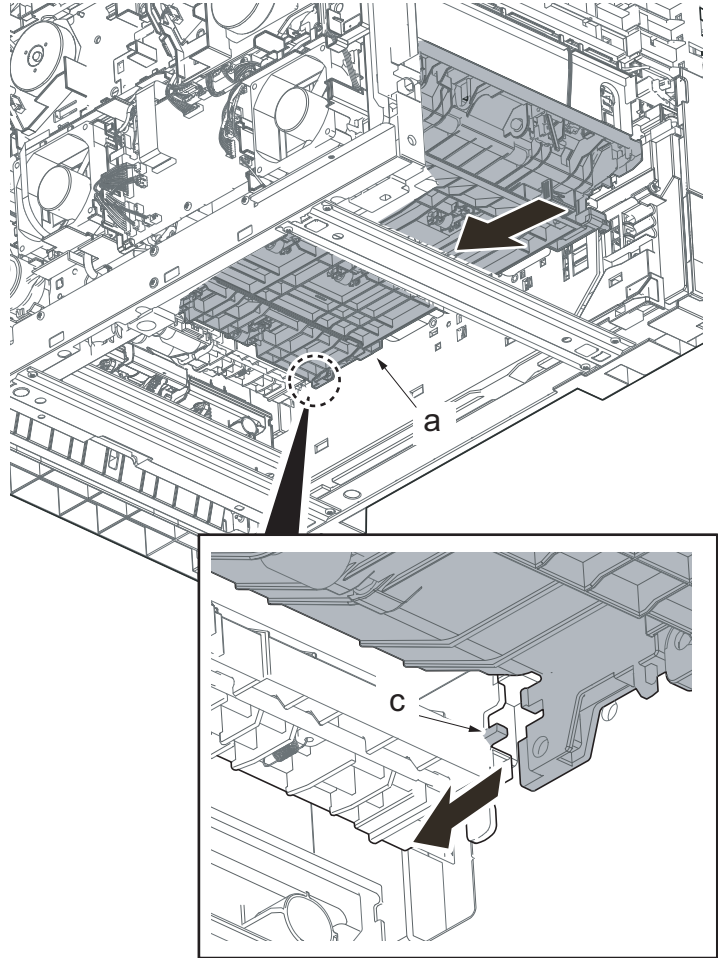


Figure 4-371

### Detaching the engine relay PWB

38. Disconnect all the connectors and FFCs from the engine relay PWB (a).  
30 ppm model: 23 connectors  
35/40 ppm model: 24 connectors  
YC27 is used only for 35/40 ppm model.

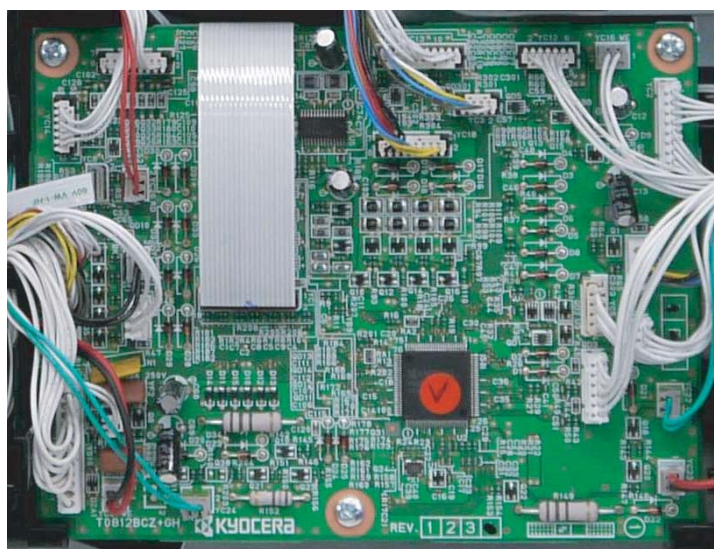
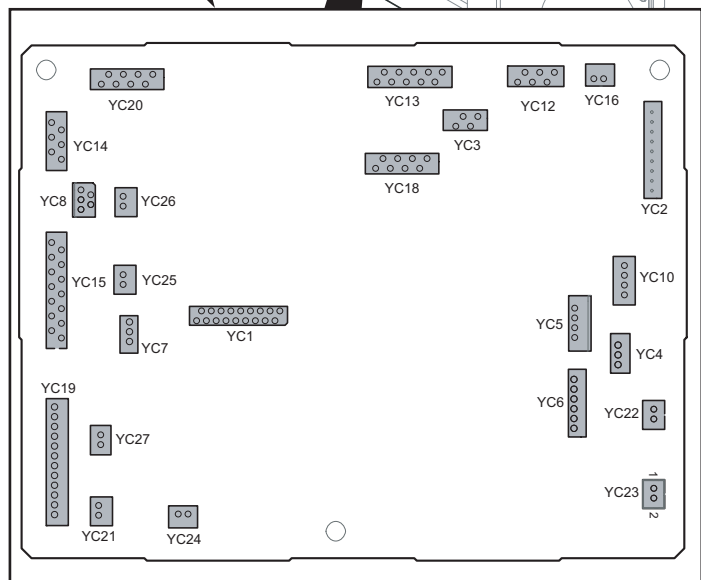
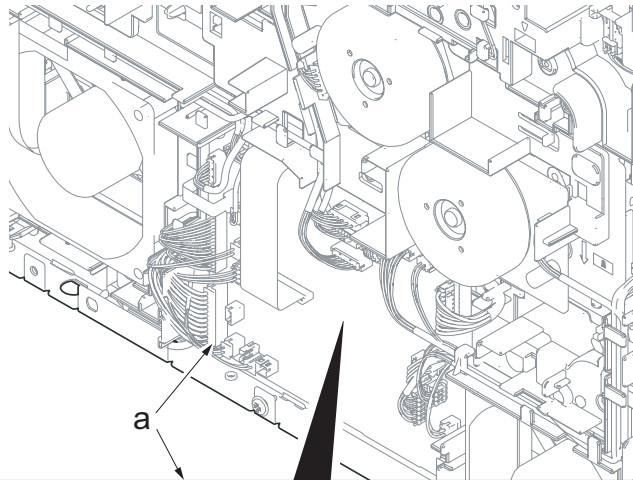


Figure 4-372



39. Remove three screws (a)(M3x8).
40. Detach the engine relay PWB (b).
41. Check the engine relay PWB and clean or replace it if necessary.
42. Reattach the parts in the original position.

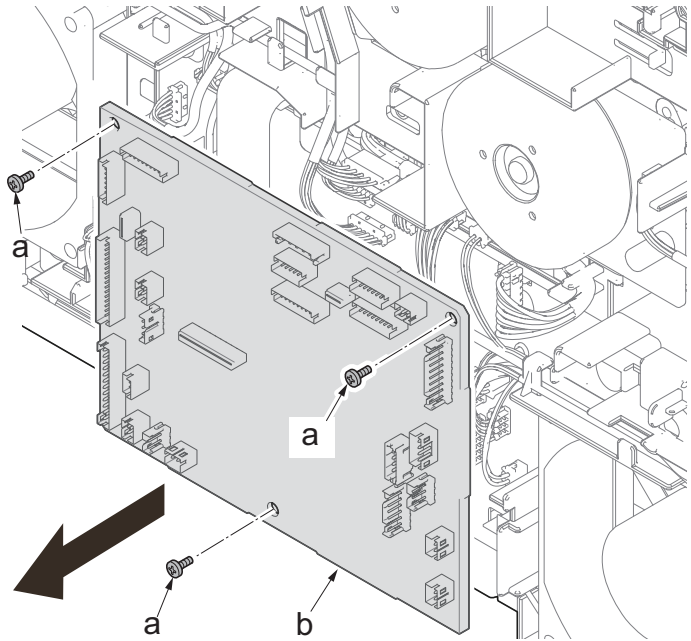


Figure 4-373

**Detaching the MP paper feed drive unit**

43. Rotate the cam (a) inside the main unit to the position in the figure.

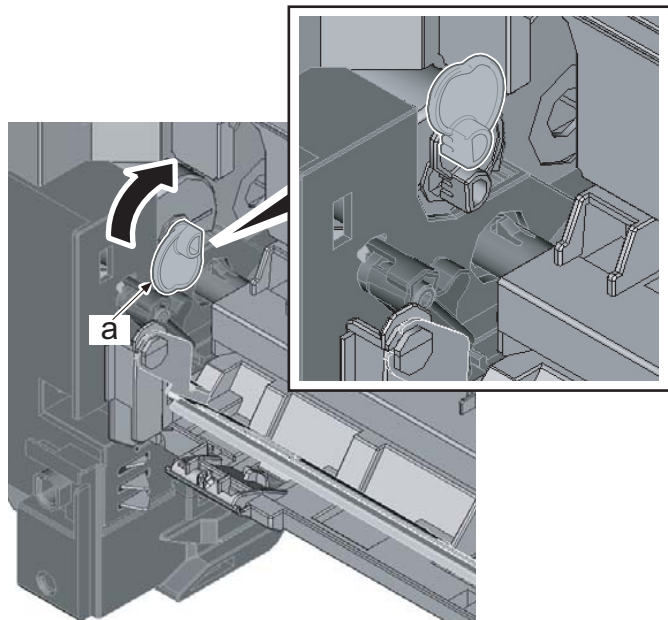


Figure 4-374

44. Disconnect eight connectors (b) from the engine relay PWB (a).

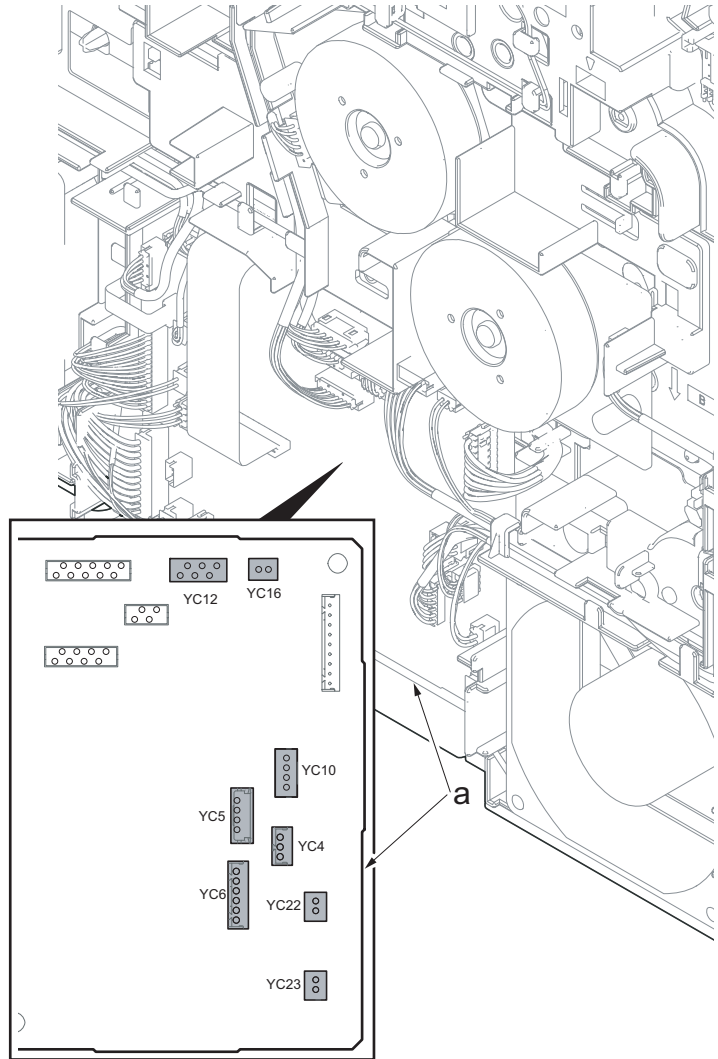


Figure 4-375

45. Release the wire (b) from five hooks (a).

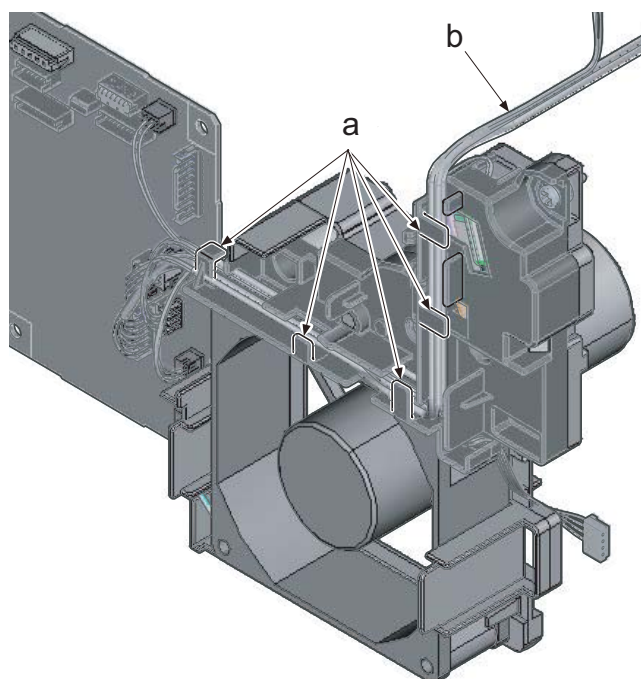


Figure 4-376

46. Remove two screws (a)(M3x12).
47. Lift up the MP paper feed drive unit (b) to release the lower two hooks (c).
48. Detach the MP paper feed drive unit (b).
49. Check the MP paper feed drive unit and clean or replace it if necessary.
50. Reattach the parts in the original position.

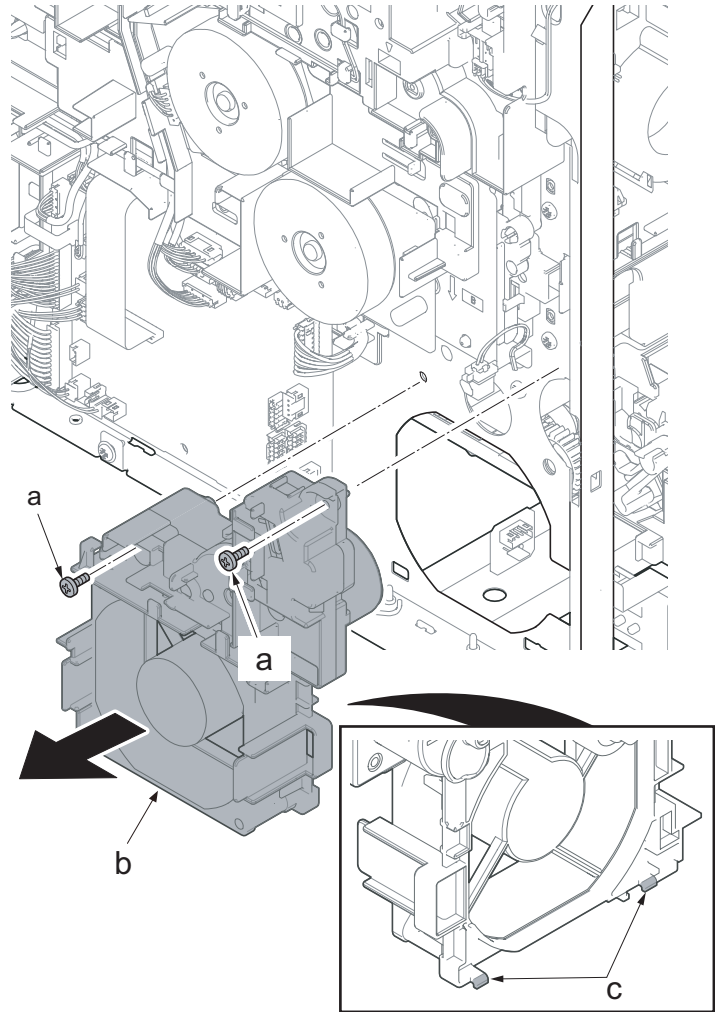
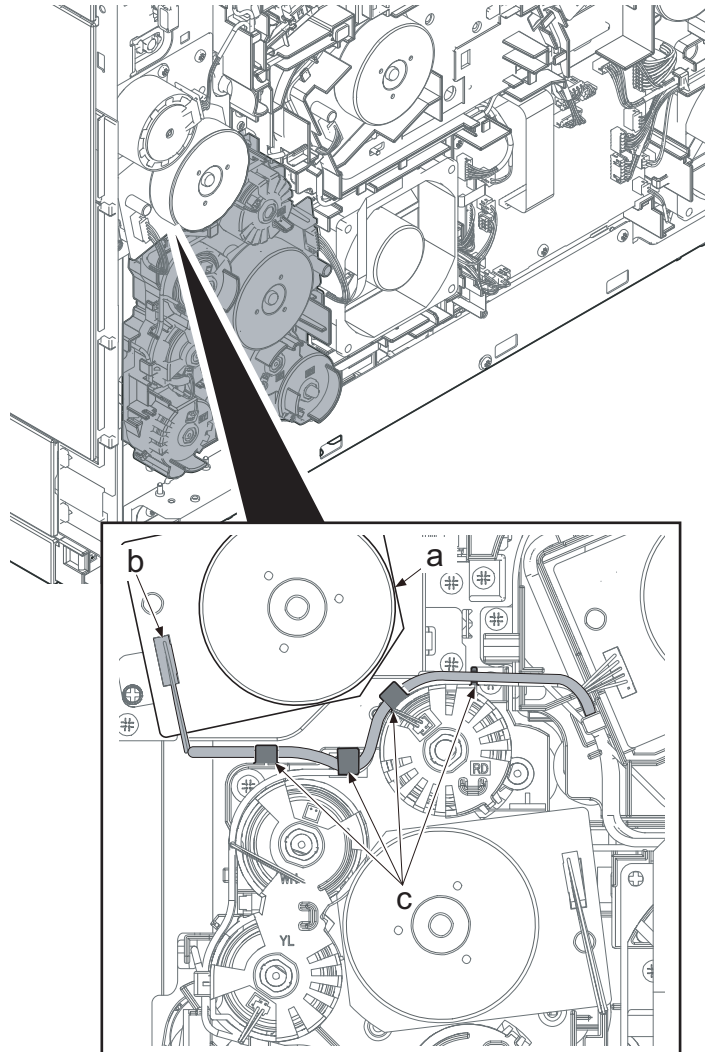


Figure 4-377

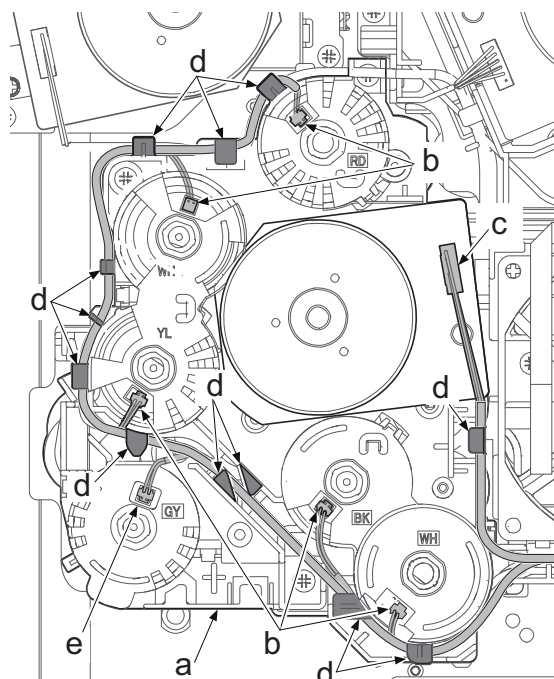
**Detaching the paper feed drive unit**

- 51. Disconnect the connector (b) of the primary transfer motor (a).
- 52. Release the wire from four hooks (c).



**Figure 4-378**

- 53. Disconnect the connector (b) and (e) of the clutch in the conveying drive unit (a).
  - 30 ppm model: 5 (b)
  - 35/40 ppm model: 6 (b) and (e)
- 54. Disconnect the connector (c) of the motor in the conveying drive unit.
- 55. Release the wire from six hooks (d).



**Figure 4-379**

56. Remove three screws (a)(M3x12).
57. Detach the conveying drive unit (b).
58. Check the conveying drive unit and clean or replace it if necessary.
59. Reattach the parts in the original position.

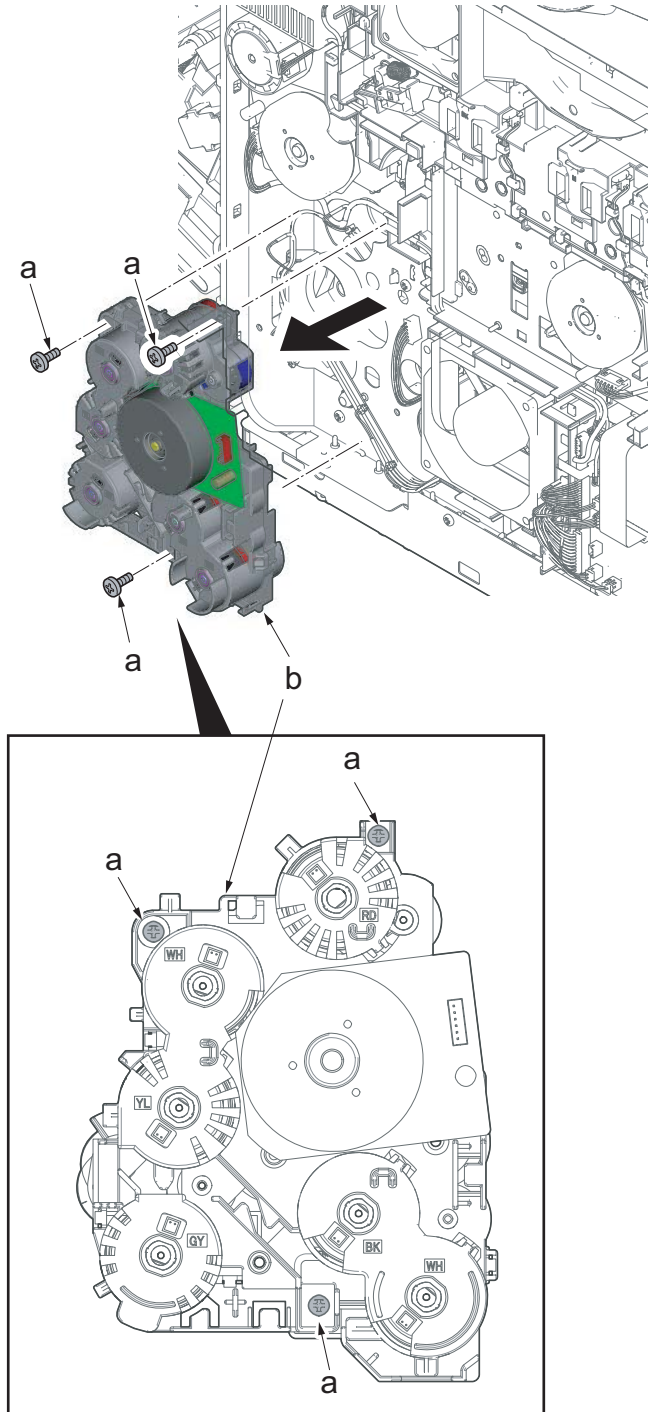


Figure 4-380

- 60. Remove the pin (a)(M3x8).
- 61. Remove two screws (a)(M3x8).

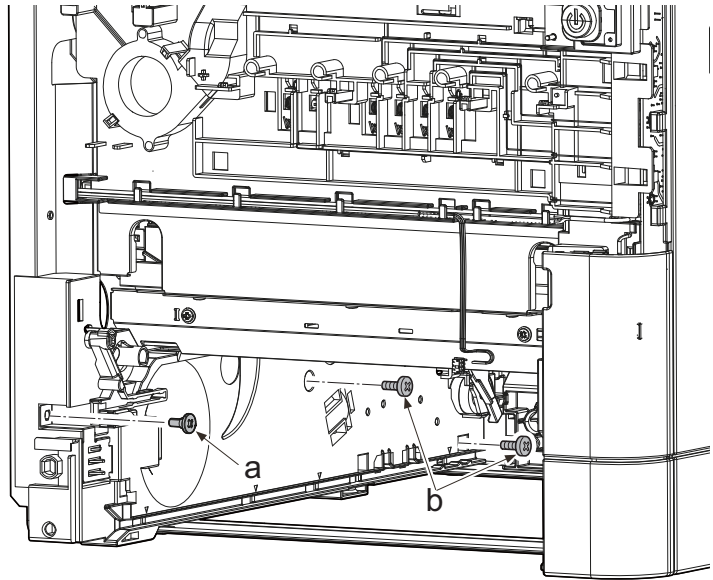


Figure 4-381

- 62. Close the duplex conveying unit (a).
- 63. Remove two straps (c) of the rear cover (b).

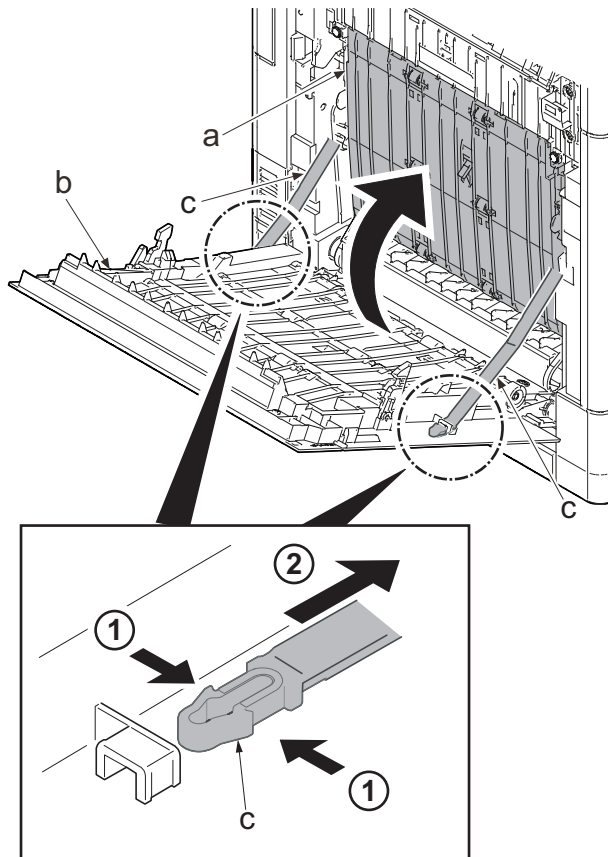


Figure 4-382



64. Align the rear cover in the direction of the arrow, then release the fulcrum parts (b) and (c), and remove the rear cover (a).

\*: To remove the fulcrum pin, first spread out the frame on the side (b).

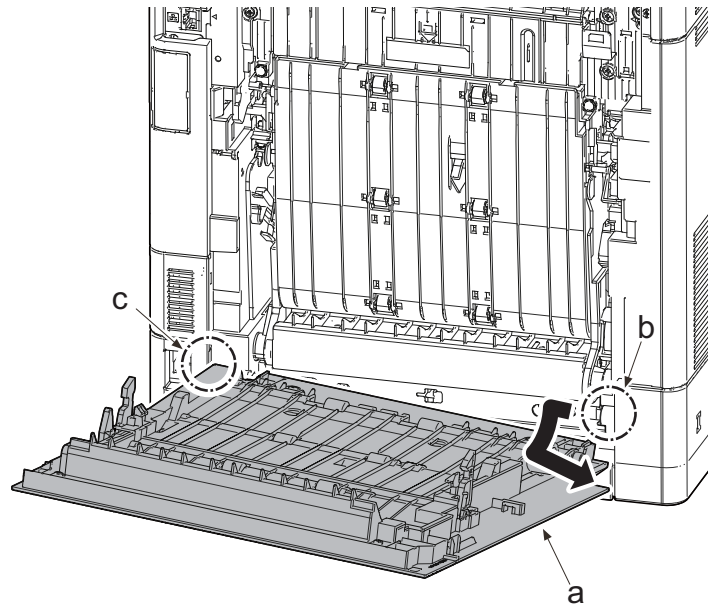


Figure 4-383



65. Pull the conveying stopper (a) toward the machine right side and rotate it by using a flat-blade screwdriver (b).
66. Release the hook (c) of the conveying stopper (a) from the rib (d) and pull the conveying stopper (a) out.

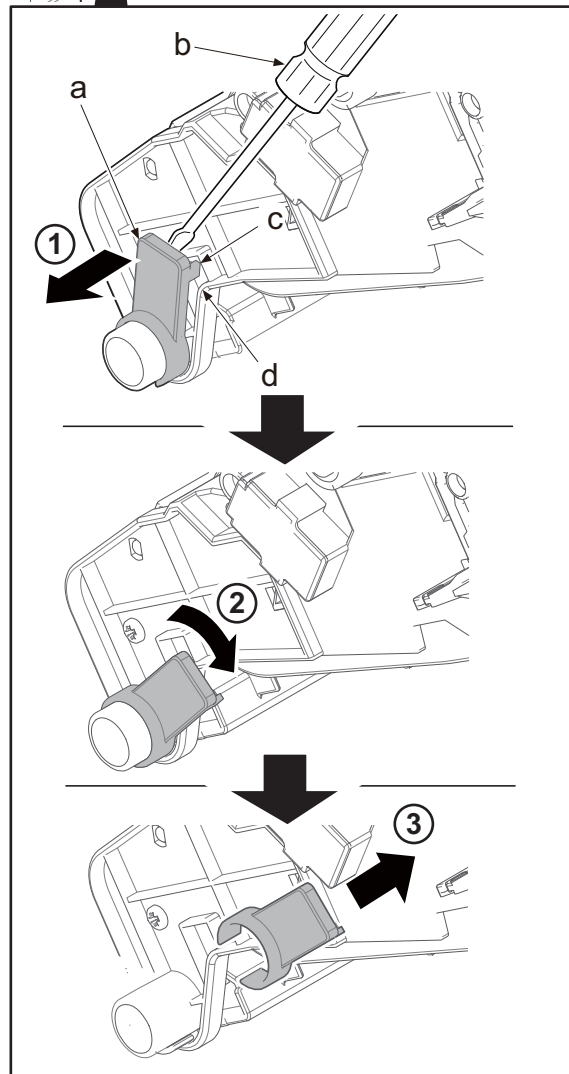
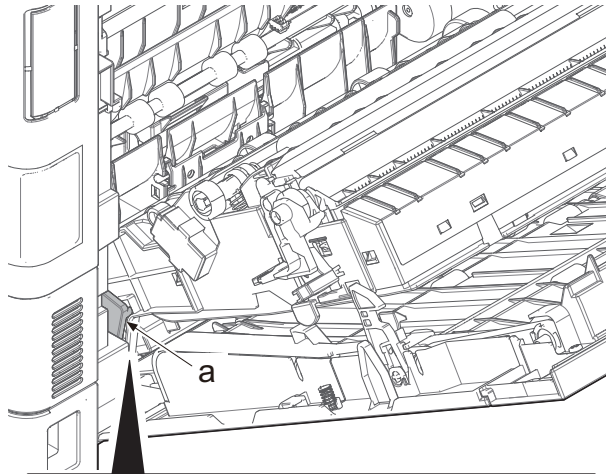


Figure 4-384

67. Slide the duplex paper conveying unit (a) toward the machine right side.
68. Release the fulcrum part of the duplex paper conveying unit (a) at the machine left side, and pull the unit out toward the machine rear side.

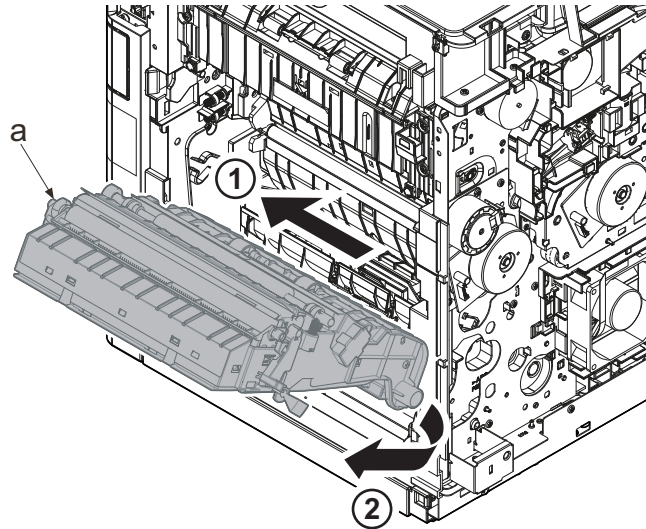


Figure 4-385

**Detaching the middle roller unit**

69. Push the machine right side hook (a) outward using a flat-blade screwdriver (b).

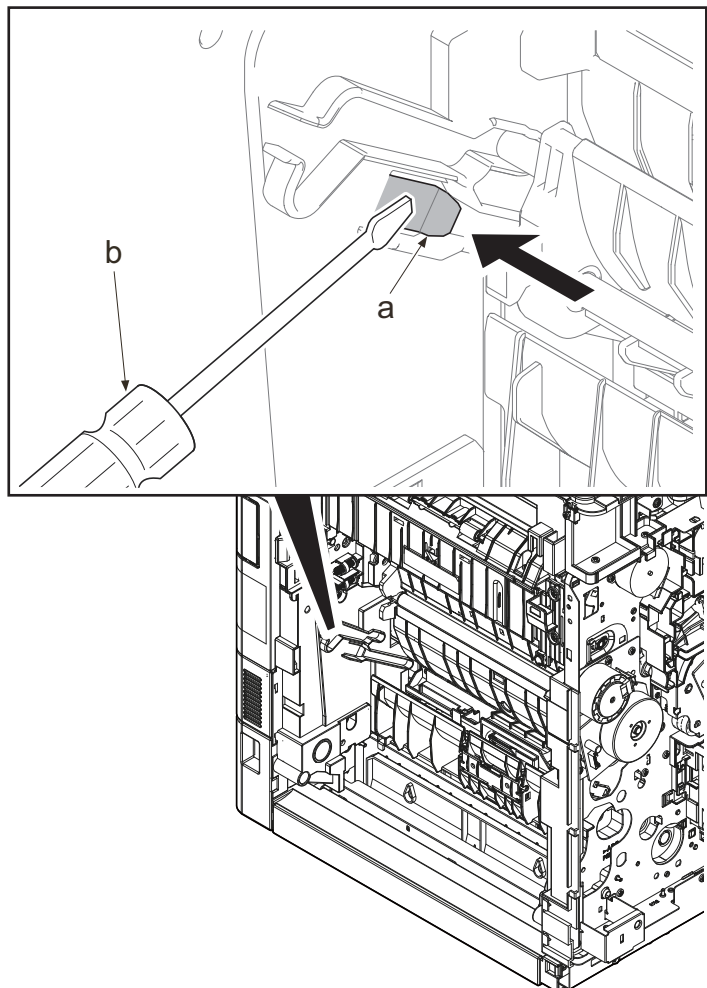


Figure 4-386

70. Pull the middle roller unit (b) out by holding handle A2 (a).

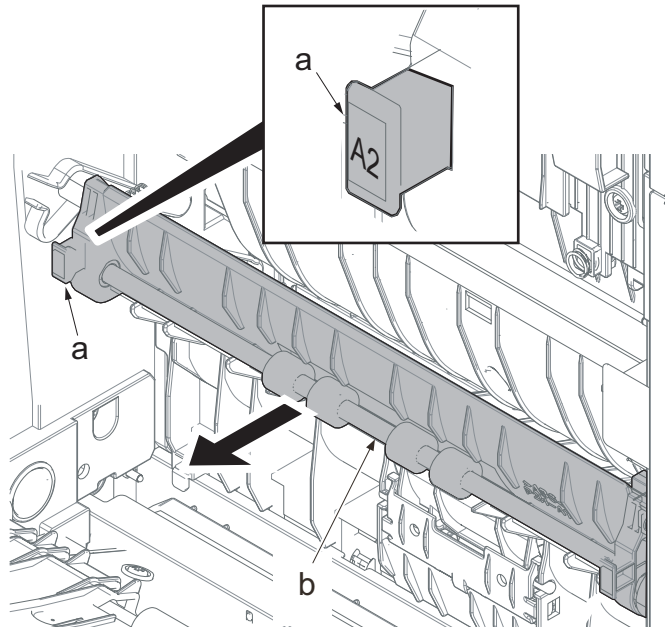


Figure 4-387

71. Remove the machine right side shaft (b) of the middle roller unit (a) from the rail (c).

72. Detach the middle roller unit (a).

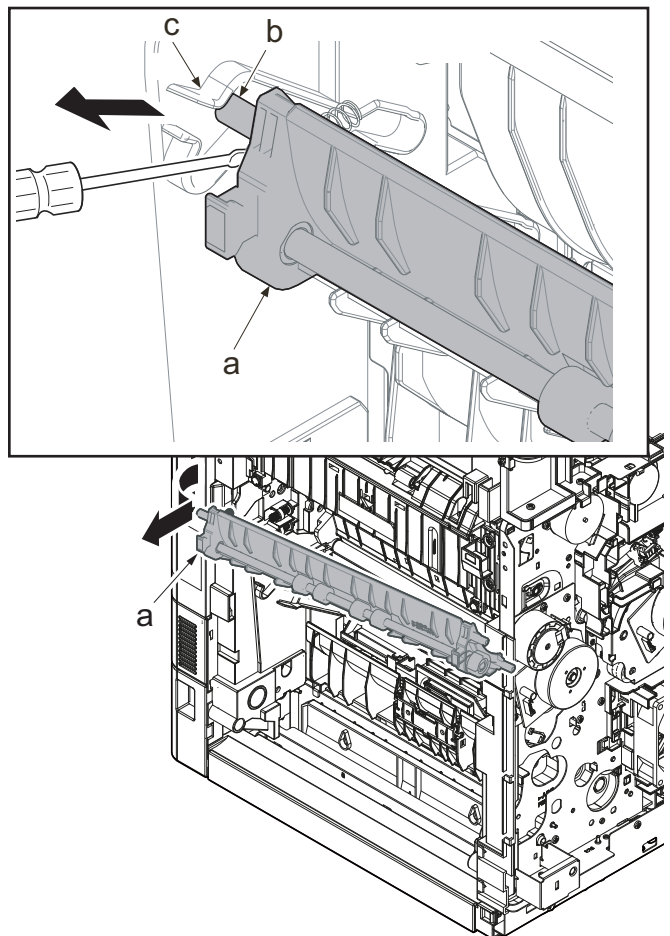


Figure 4-388

73. Remove two screws (a)(M3x8)

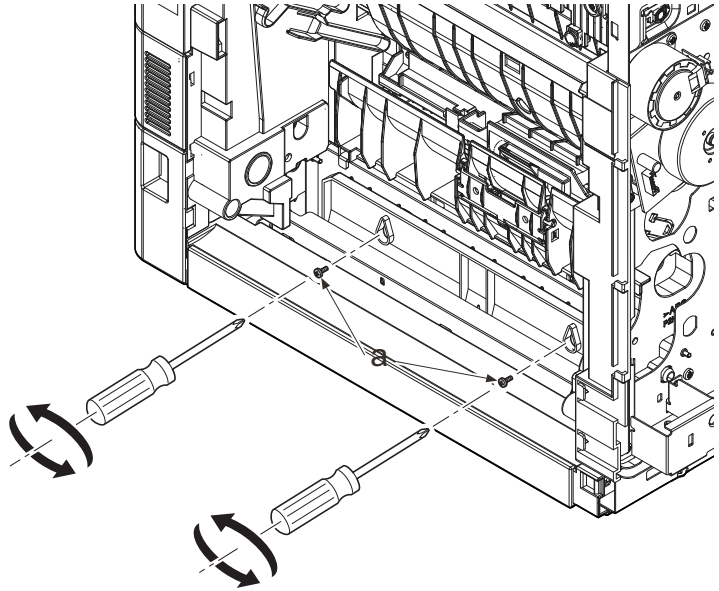


Figure 4-389

74. Detach the cassette guide (a).

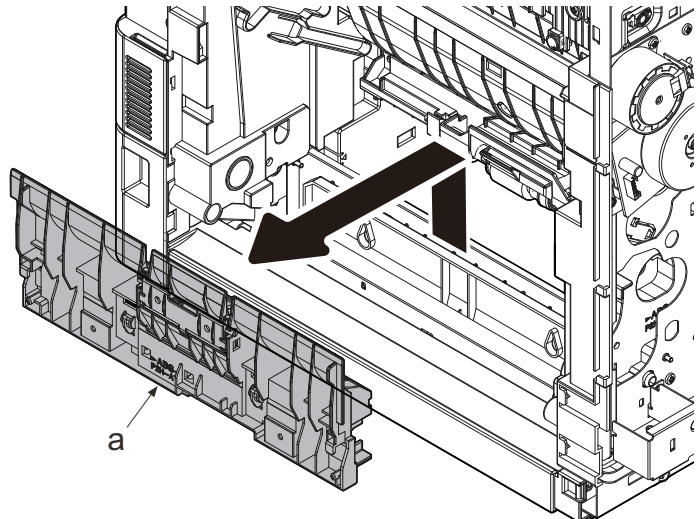


Figure 4-390

75. Remove two screws (a)(M3x8)

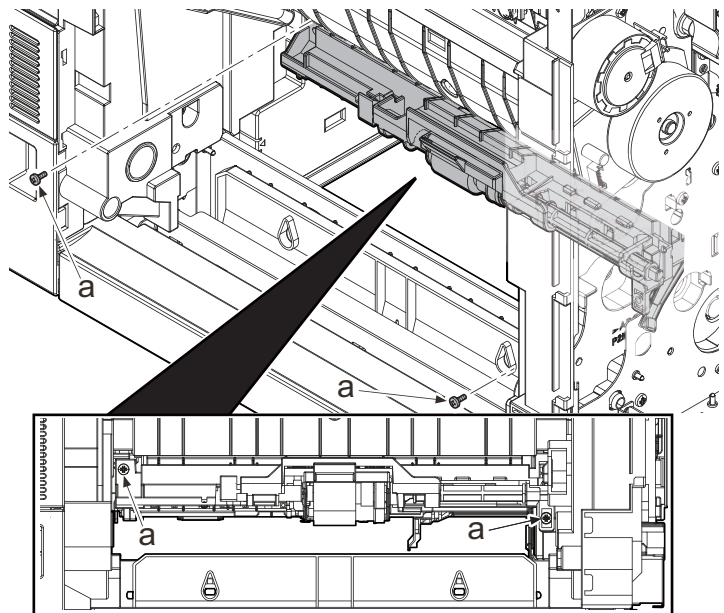


Figure 4-391

76. Detach the pick-up guide (a) in the direction of the arrow while passing the FFC (b) through the aperture.

\*: Take care of the FFC not being caught up.

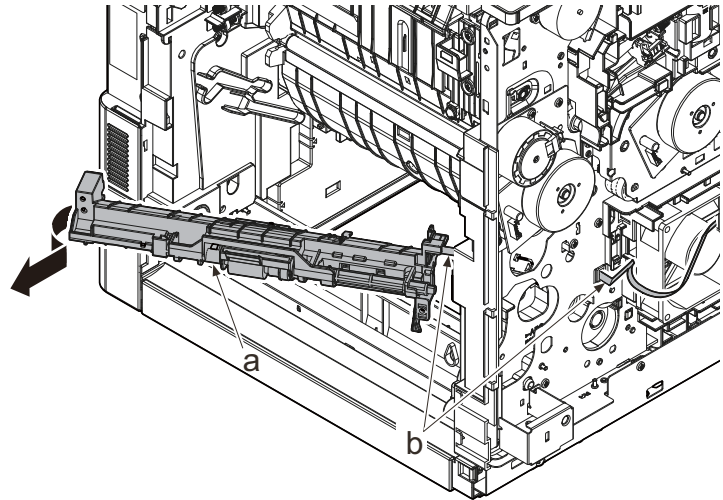


Figure 4-392

77. Insert the flat-blade screwdriver (b) into the gap on the left side cassette guide (a) and release the hook (c).

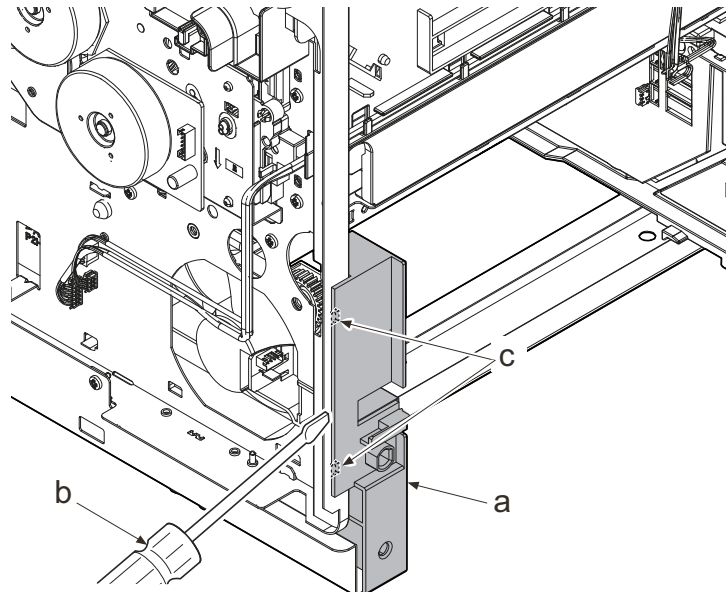


Figure 4-393

78. Release two hooks (b) with a flat-blade screwdriver (a) while pressing the part A.

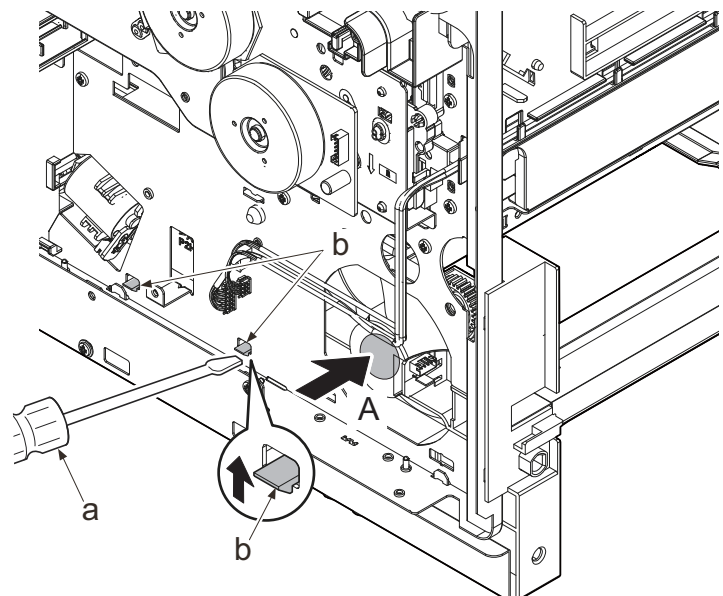


Figure 4-394



79. Release the hook (b) with a flat-blade screwdriver (a) while pressing the part A.

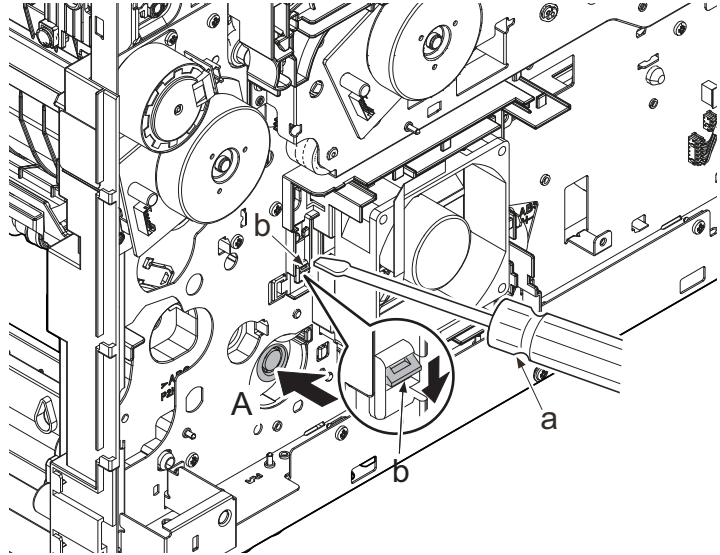


Figure 4-395

80. Detach the cassette lift unit (a) the direction of the arrow.

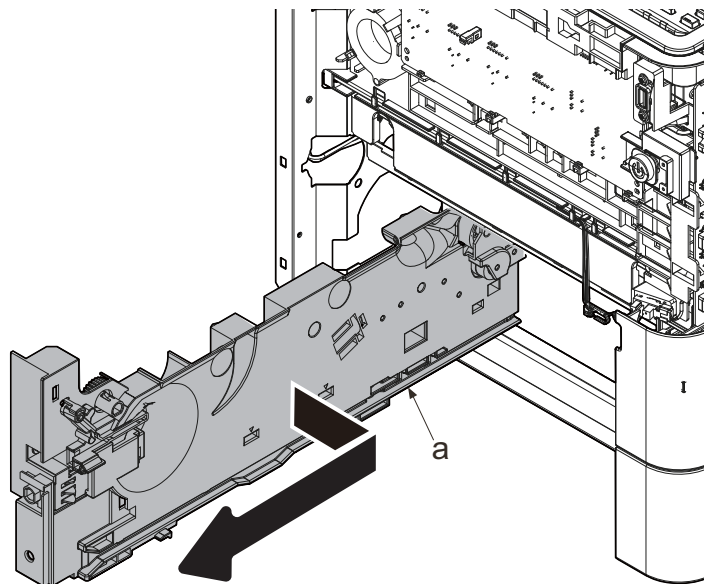


Figure 4-396

81. Check the cassette lift unit (a) and clean or replace it if necessary.  
82. Reattach the parts in the original position.

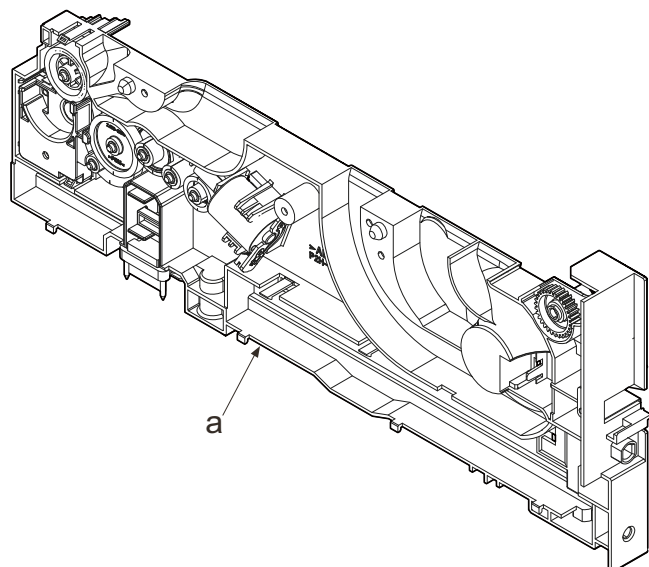


Figure 4-397

## (7) Operation section

### (7-1) Detaching and reattaching the language sheet

#### 30 ppm model

1. Insert a flat-blade screwdriver (a) into the square hole (c) of the panel fixing plate (b) and remove it by lifting it up.

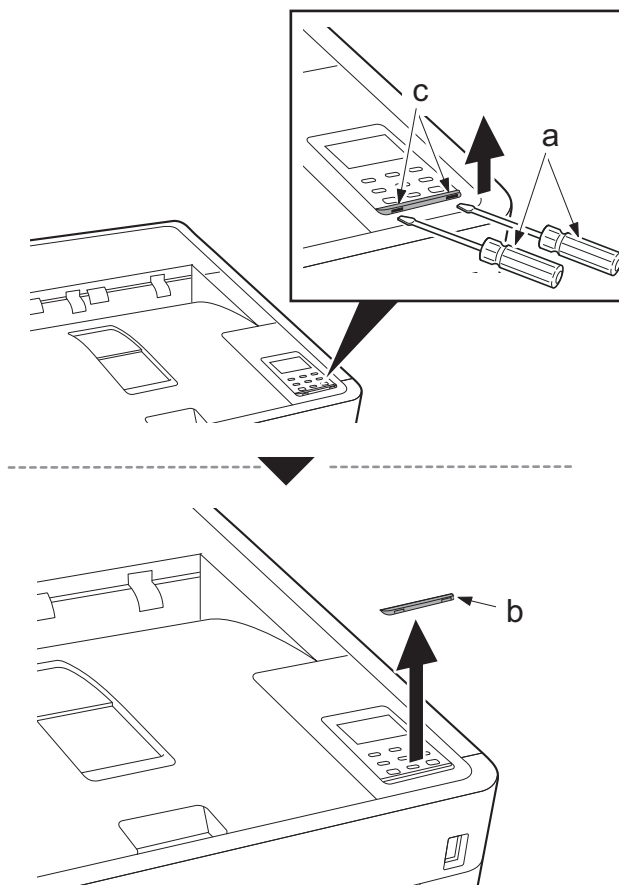


Figure 4-398

2. Remove the operation panel covers (a).
3. Replace the operation panel sheets (b) with the ones in the supported language.
4. Reattach the parts in the original position.

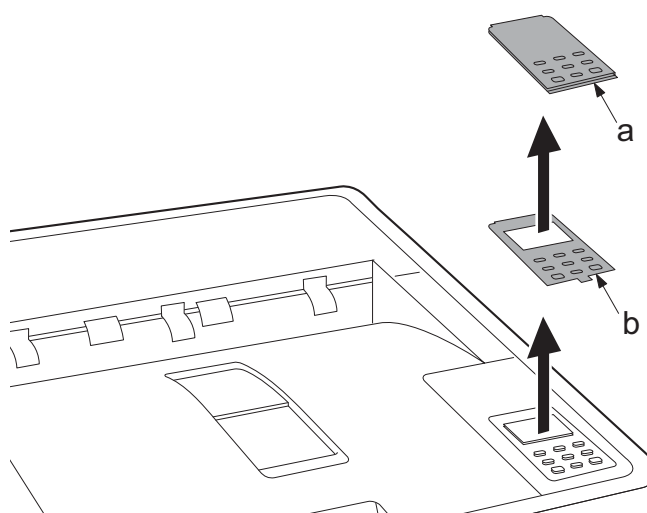


Figure 4-399



### 35 ppm model

1. Insert a flat-blade screwdriver (a) into the square hole (c) of the panel fixing plate (b) and remove it by lifting it up.

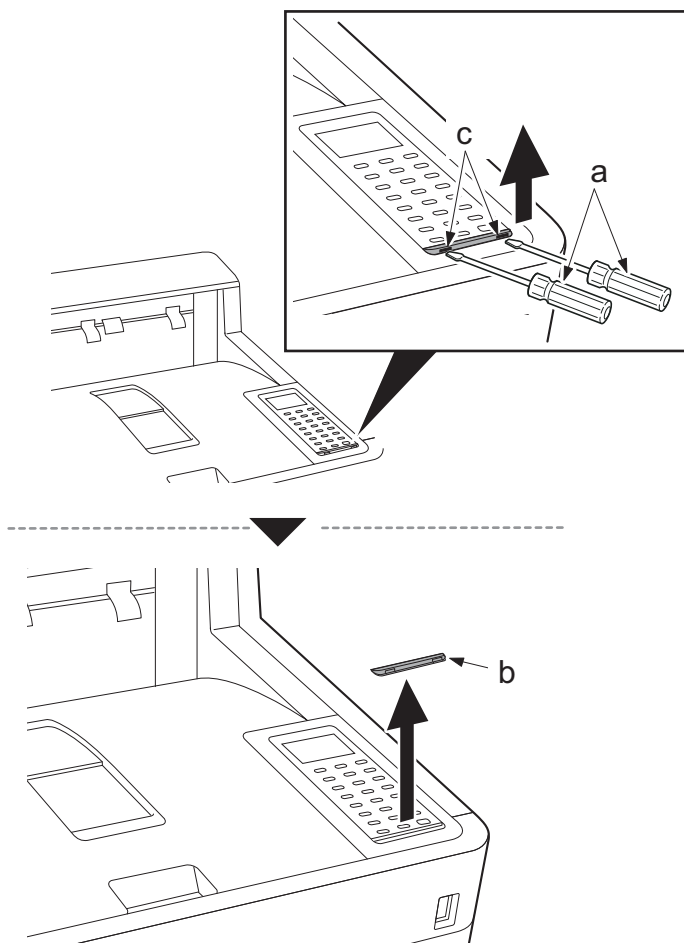


Figure 4-400

2. Remove the operation panel covers (a).
3. Replace the operation panel sheets (b) with the ones in the supported language.
4. Reattach the parts in the original position.

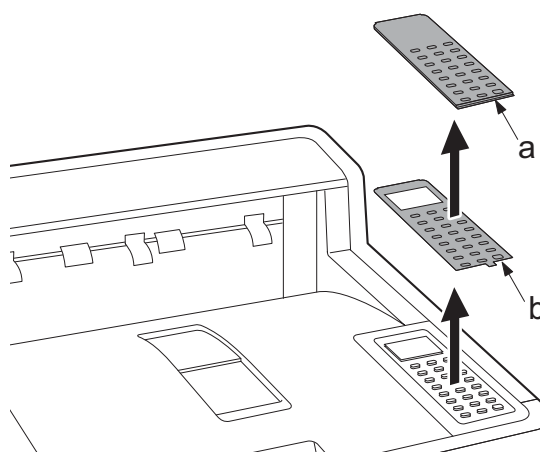


Figure 4-401

## (8) Fan motor

### (8-1) Attaching direction

#### IMPORTANT

When reattaching the fan motor, be aware of the attachment direction (in-take/exhaust).

#### 30 ppm model

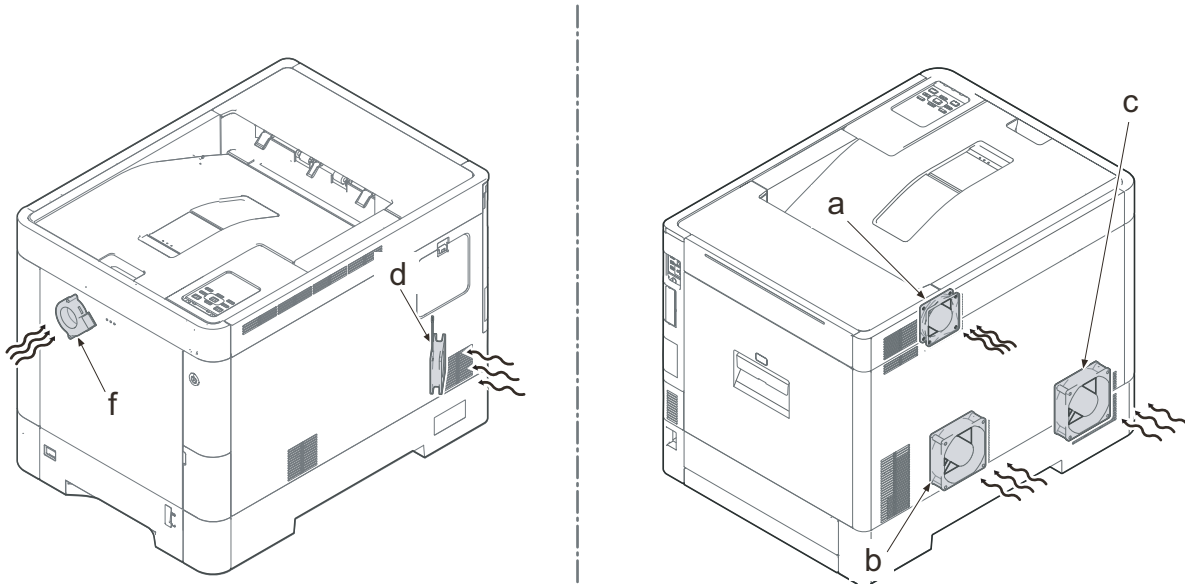


Figure 4-402

#### 35/40 ppm model

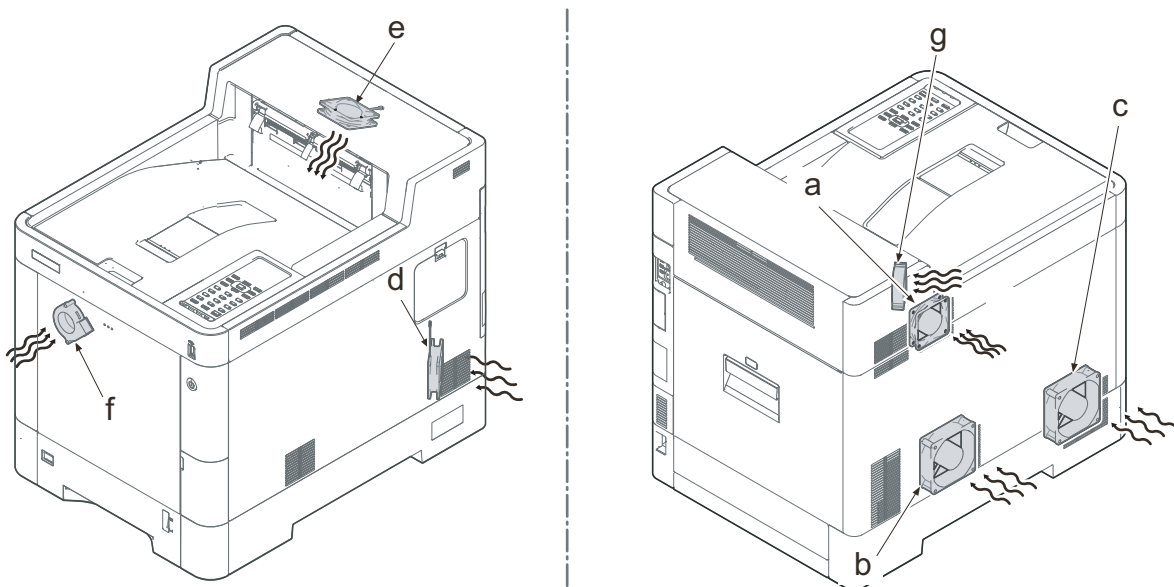


Figure 4-403

- a. Container fan motor : (Rating label: inside) in-take
- b. LSU fan motor1 : (Rating label: inside) in-take
- c. LSU fan motor2 : (Rating label: inside) in-take
- d. Power supply fan motor : (Rating label: inside) in-take
- e. Eject fan motor : (Rating label: lower) in-take (35/40 ppm model only)
- f. Transfer fan motor : (Rating label: inside) in-take
- g. Duplex fan motor : (Rating label: inside) in-take (40 ppm model only)

## 4-7 Disassembly & reassembly procedures for the paper feeder (option)

### (1) Detaching and reattaching the retard roller unit and feed roller unit

#### (1-1) Detaching and reattaching the retard roller unit

1. Open the PF rear cover (a).

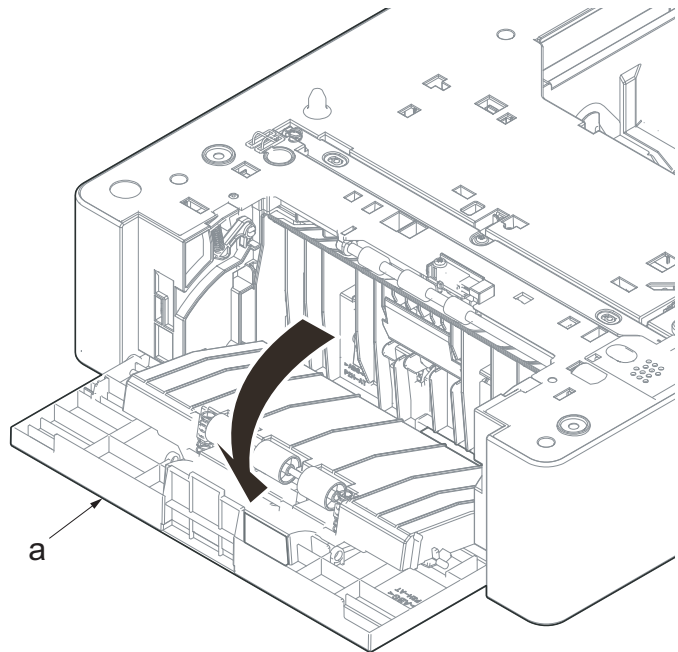


Figure 4-404

2. Release two hooks (a) using a flat-blade screwdriver (b).
3. Remove the retard guide (c).

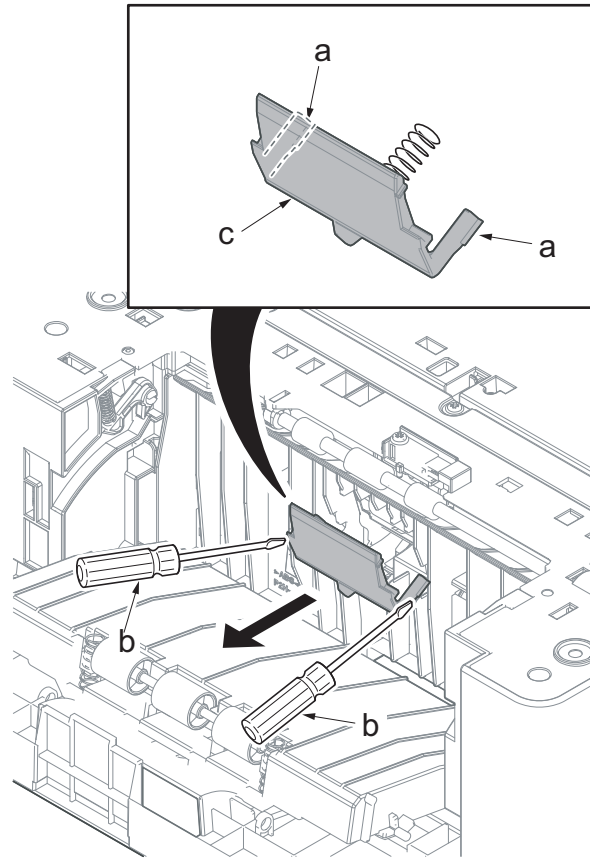


Figure 4-405

4. Remove the retard roller unit (a).
5. Check the retard roller unit and clean or replace it if necessary.
6. Reattach the parts in the original position.

**IMPORTANT**

Install the cassette first when attaching the retard roller unit. The retard pressure release lever must be located at the machine front side from the retard roller unit to apply appropriate pressure.

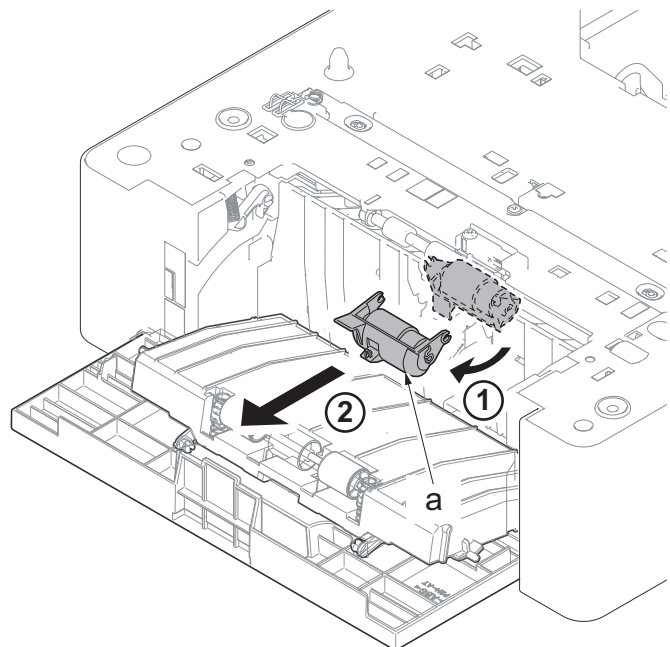


Figure 4-406

## (2) Detaching and reattaching the paper feed roller unit

1. Remove the cassette (a) from the paper feeder (b).
2. Remove the retard roller unit (d).

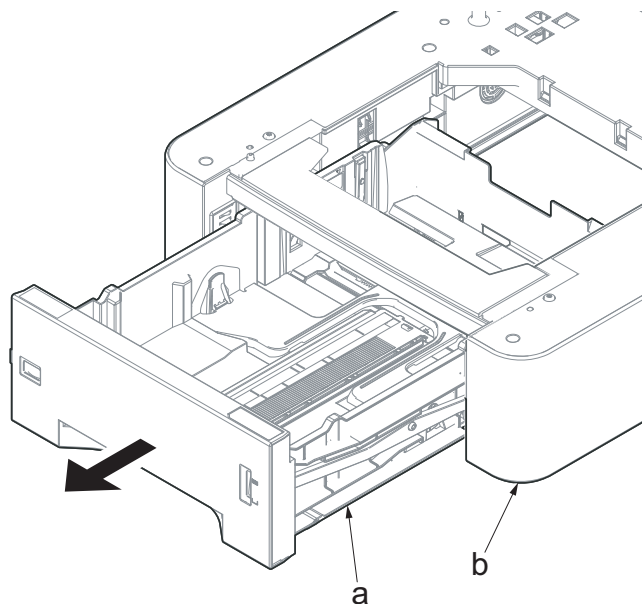


Figure 4-407

3. Place the paper feeder (a) while turning it over.

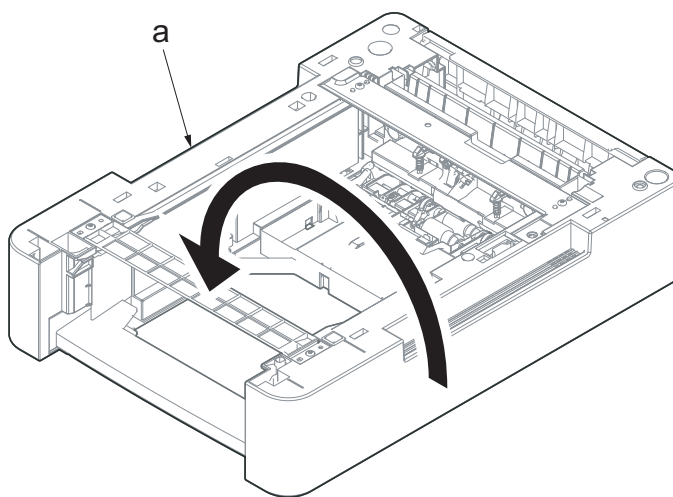


Figure 4-408

4. Push the lock lever (a).
5. Slide the feed roller pin (b) straight and release the lock.

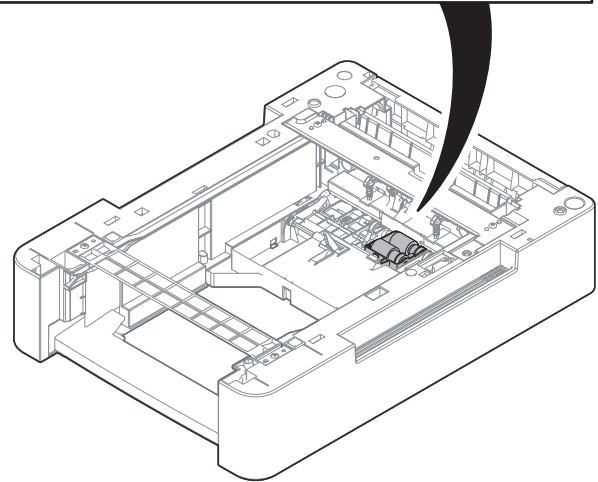
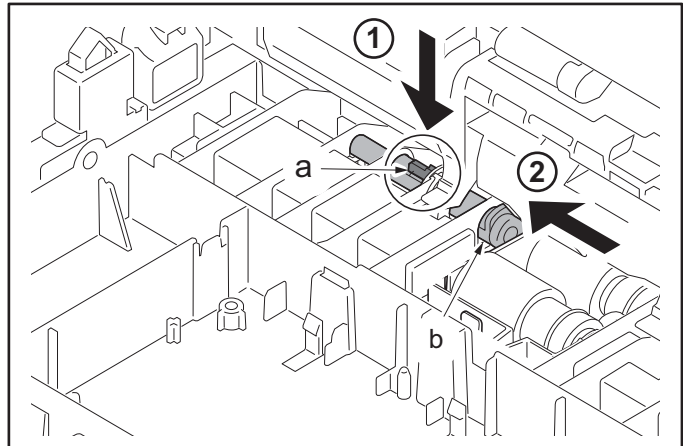


Figure 4-409

6. Push the lock lever (a).
7. Detach the paper feed roller unit (b).
8. Check the paper feed roller or pick up roller and clean or replace if necessary.
9. Reattach the parts in the original position.

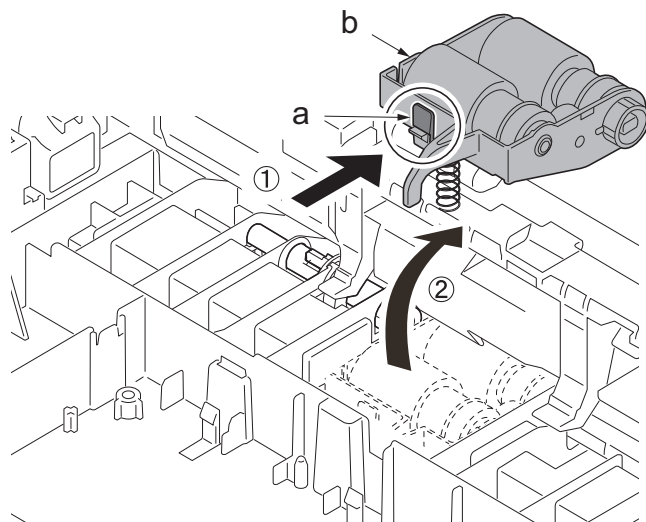


Figure 4-410

### (3) Detaching and reattaching the PF main PWB

1. Remove the cassette (a) from the paper feeder (b).

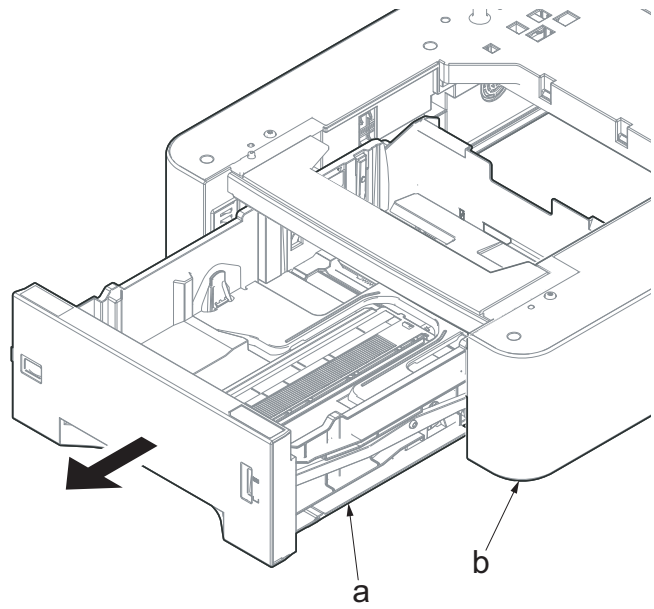


Figure 4-411

2. Place the paper feeder (a) while turning it over.

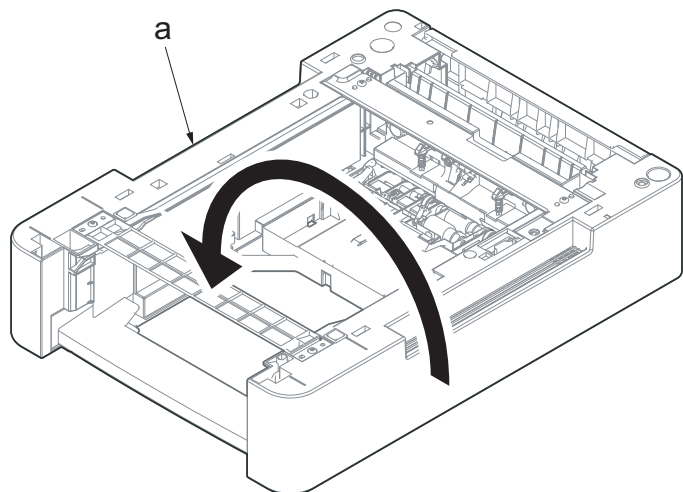


Figure 4-412



3. Release two hooks (b) of the PWB cover (a) using a flat-blade screwdriver (c).

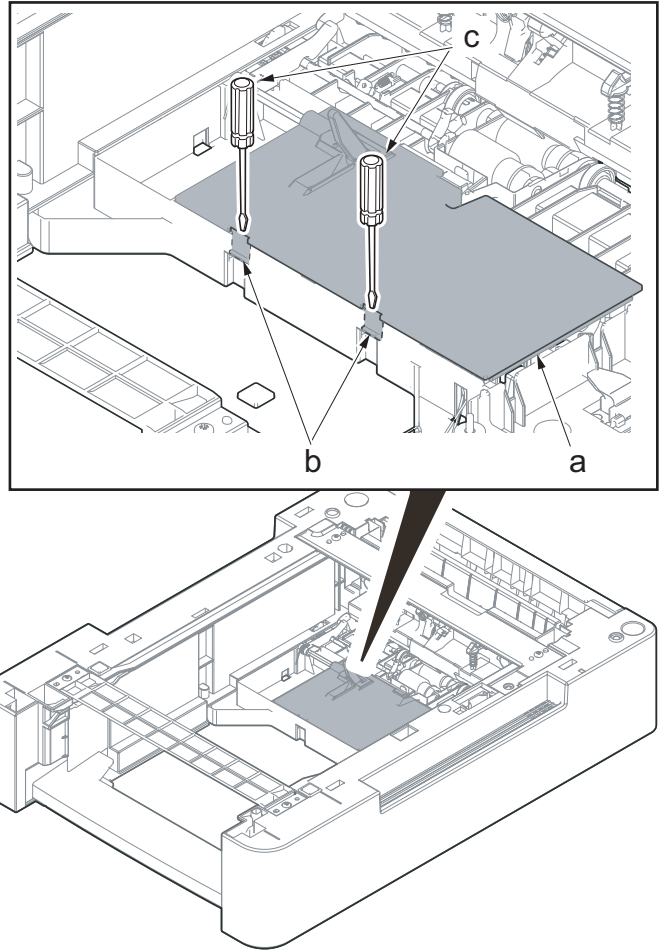


Figure 4-413

4. Detach the PWB cover (a).

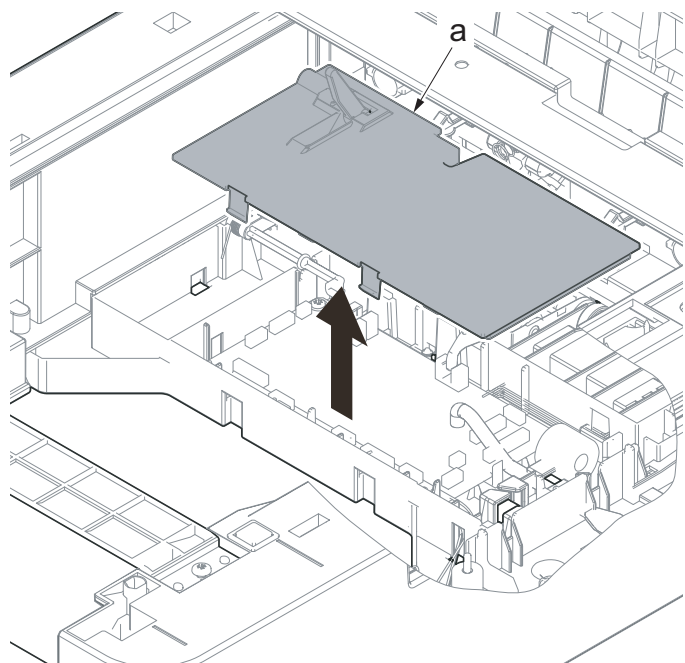


Figure 4-414

5. Remove the actuator (a) and spring (b).

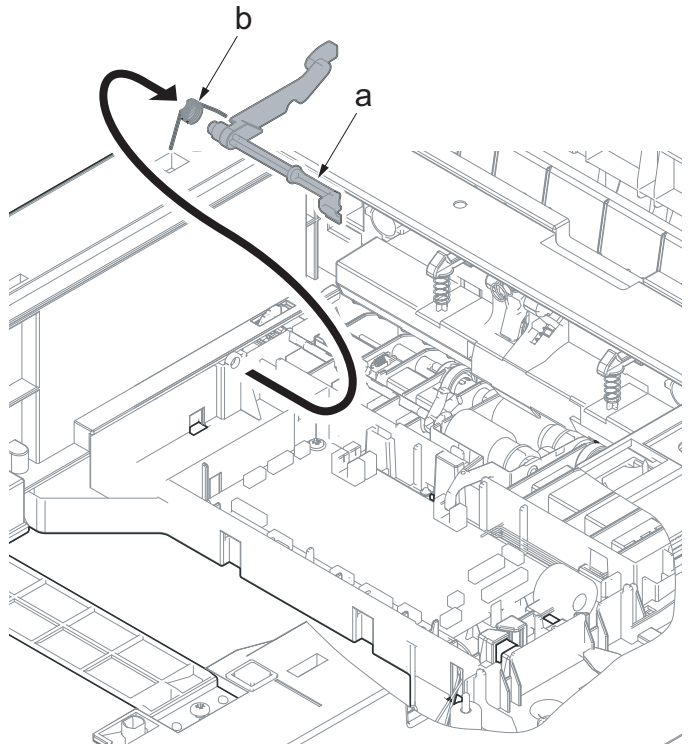


Figure 4-415

6. Disconnect all the connectors from the PF main PWB (a). (10 connectors)  
\*: YC10 connector is not used.

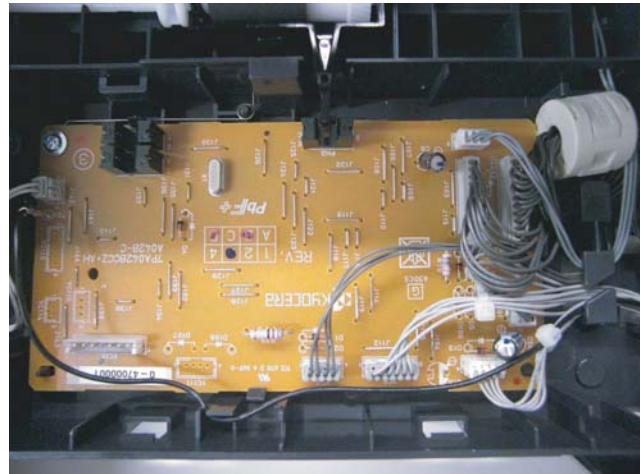
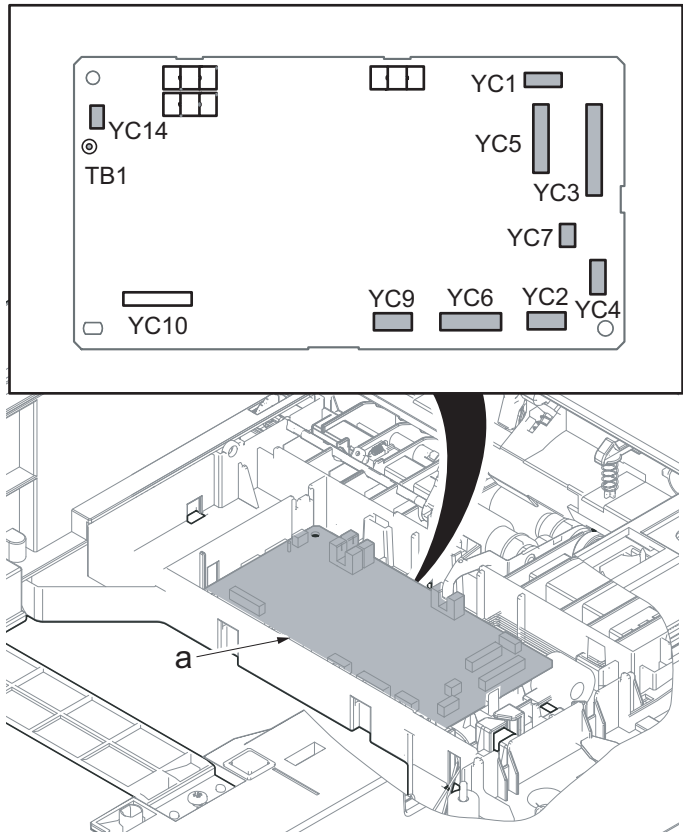


Figure 4-416

7. Push the lock lever B (a).
8. Lift up the feed roller unit (b) to release the lock.

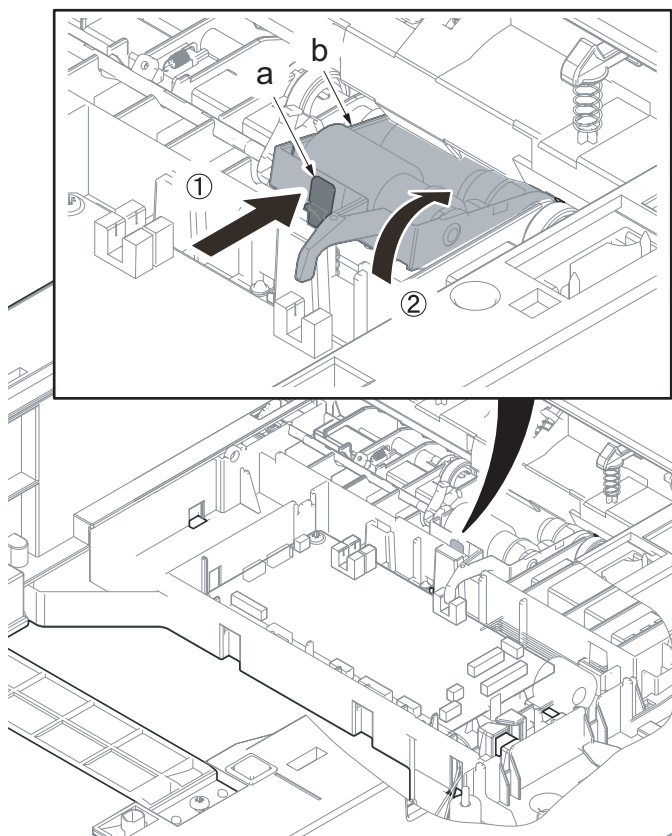


Figure 4-417

9. Remove the screw (a)(M3x8).

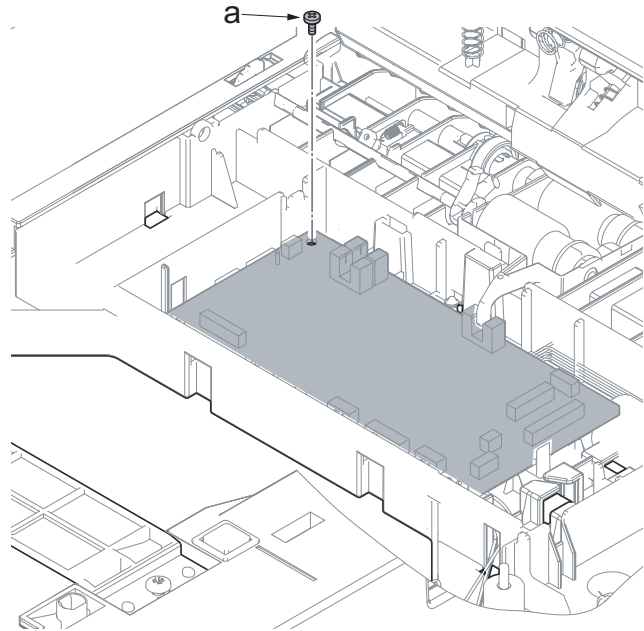


Figure 4-418

10. Remove four hooks (a) and then remove the PF main PWB (b).
11. Check the PF main PWB and clean or replace it if necessary.
12. Reattach the parts in the original position.

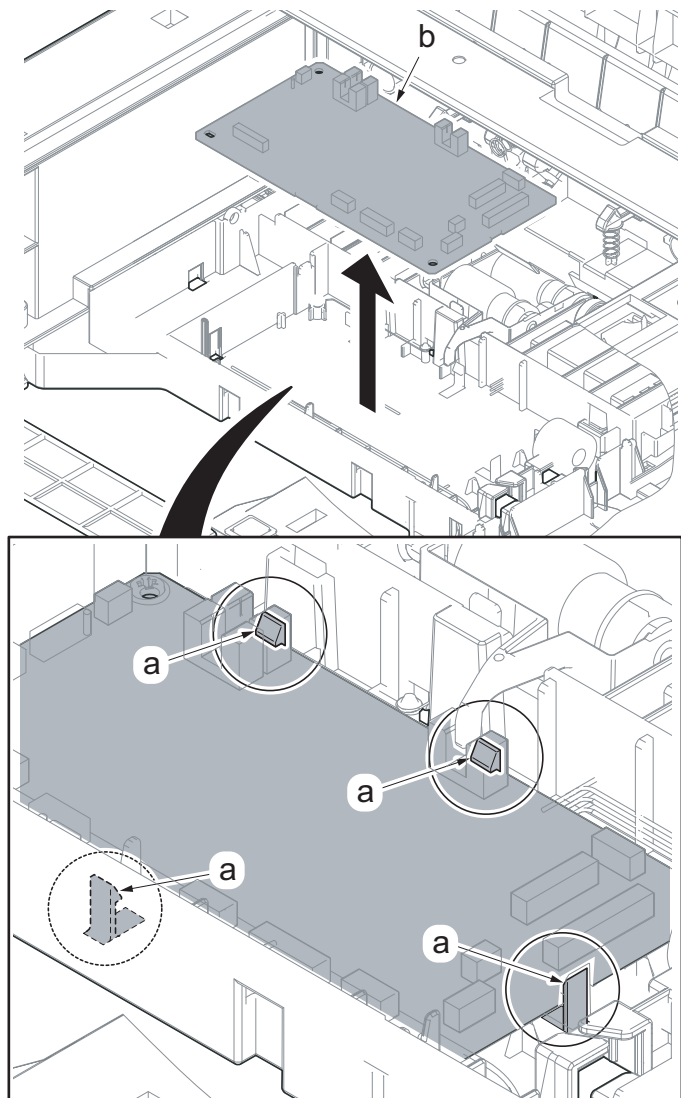


Figure 4-419

#### (4) Detaching and reattaching the PF drive unit

1. Remove the cassette (a) from the paper feeder (b).

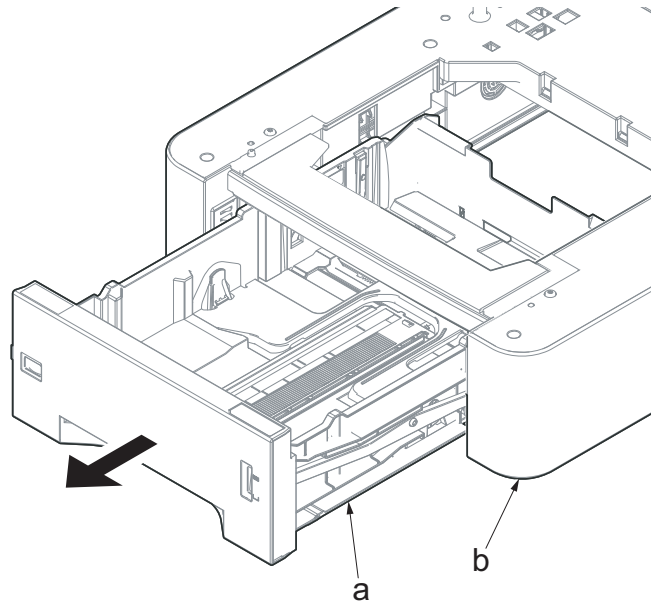


Figure 4-420

2. Remove eight screws (a)(M3x10)

**IMPORTANT**  
Secure the screws in the order of the numbers.

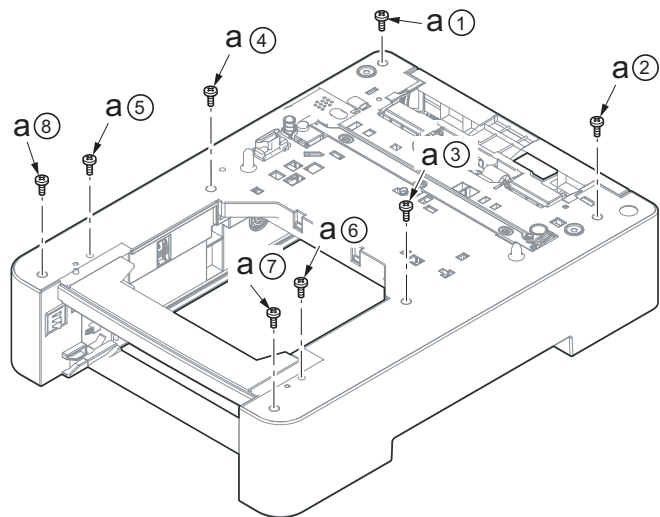


Figure 4-421

3. Place the paper feeder (a) while turning it over.

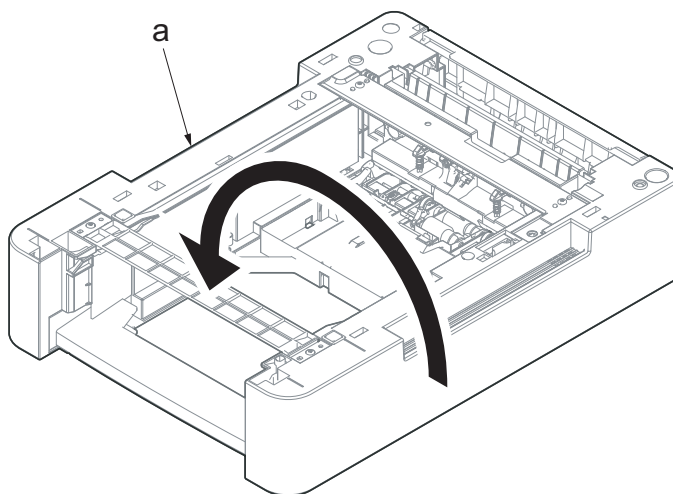


Figure 4-422

4. Release two hooks (b) of the PWB cover (a) using a flat-blade screwdriver (c).

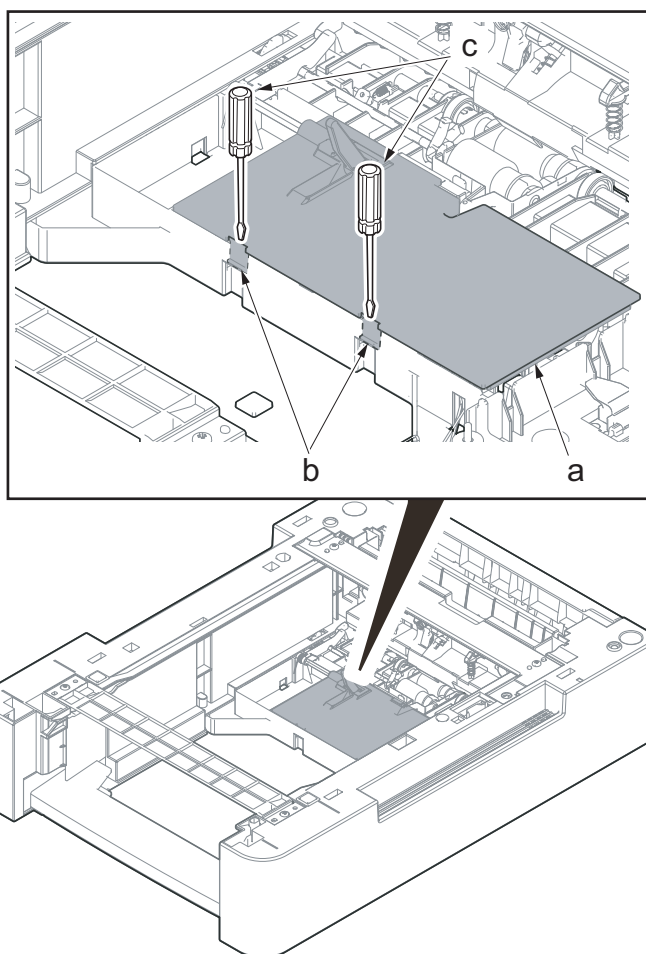


Figure 4-423



5. Detach the PWB cover (a).

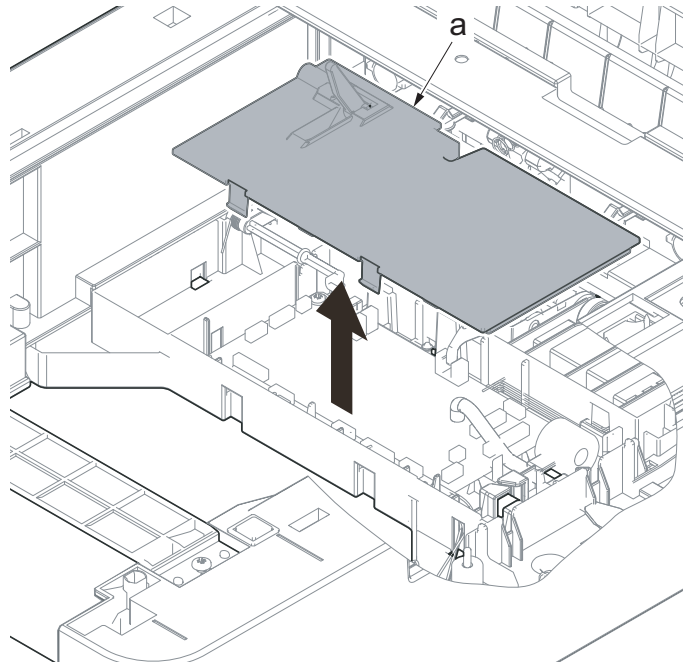


Figure 4-424

6. Remove the actuator (a) and spring (b).

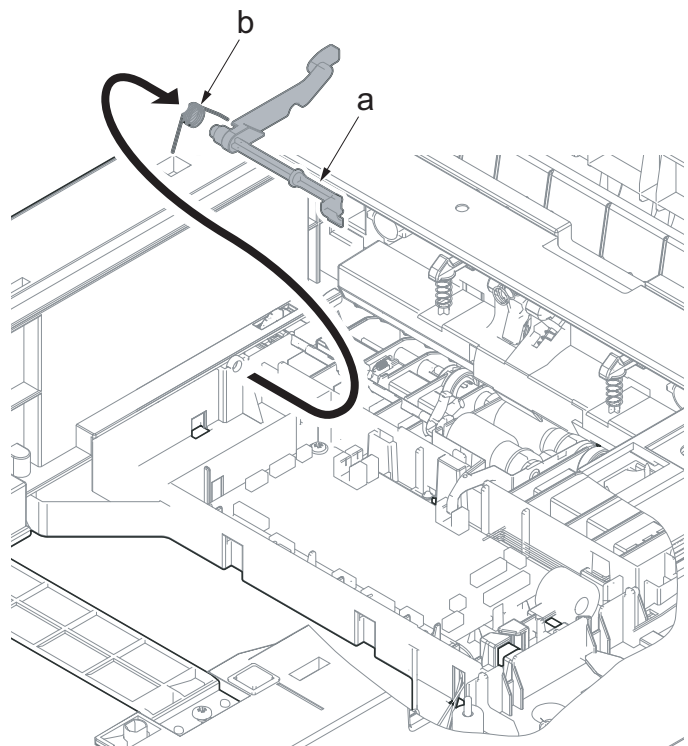


Figure 4-425

7. Disconnect nine connectors (b) from the PF main PWB (a).  
YC1 to YC7, YC9, TB1

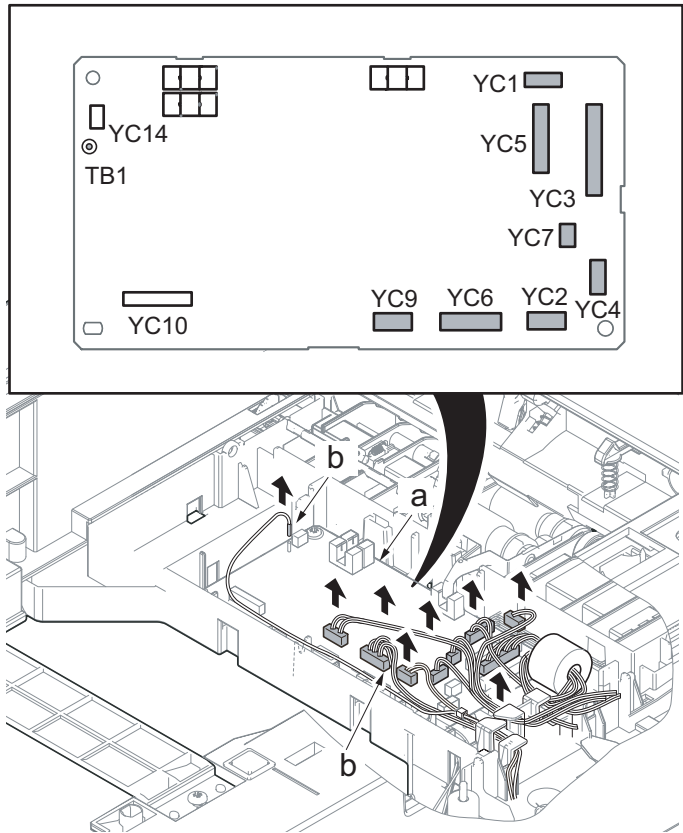


Figure 4-426

8. Remove the wire (a) from the hook (b).

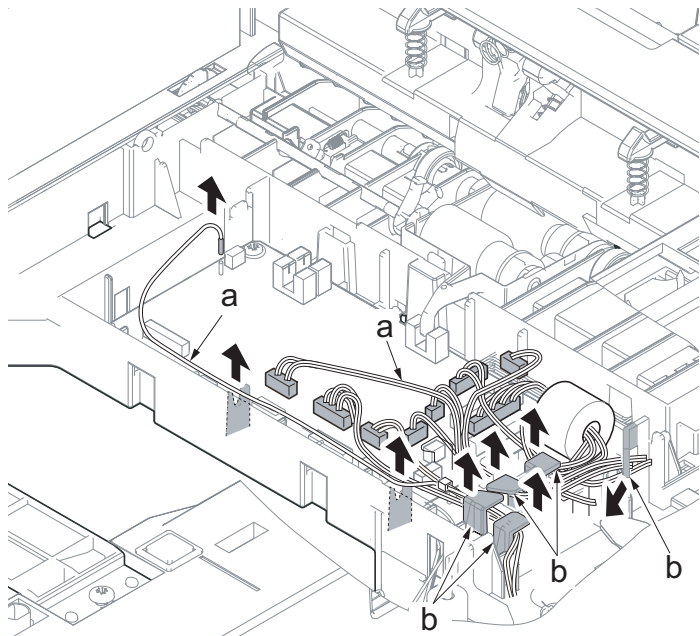


Figure 4-427

9. Place the paper feeder while turning it over. Release the hook (a) using a flat-blade screwdriver (b).

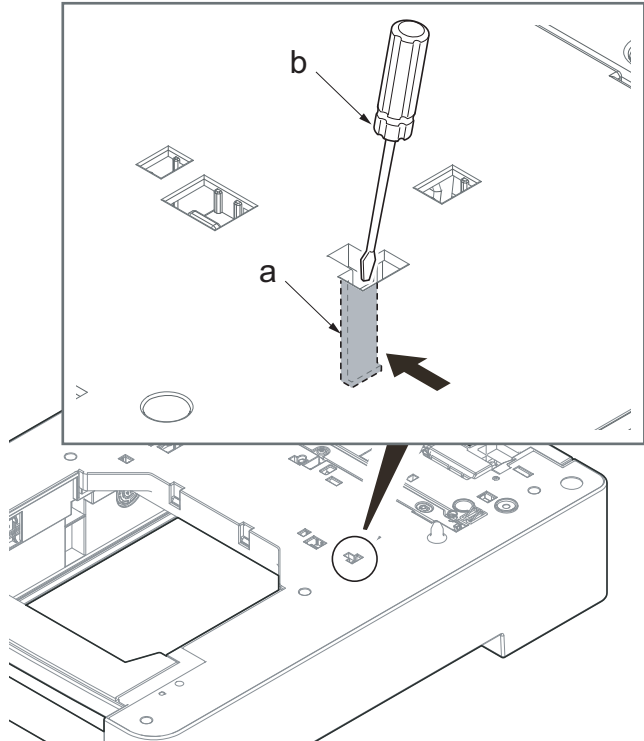


Figure 4-428

10. Place the paper feeder while turning it over. Release the hook (a) using a flat-blade screwdriver (b).  
\*: Release it while widening the cover with a flat-blad screwdriver.

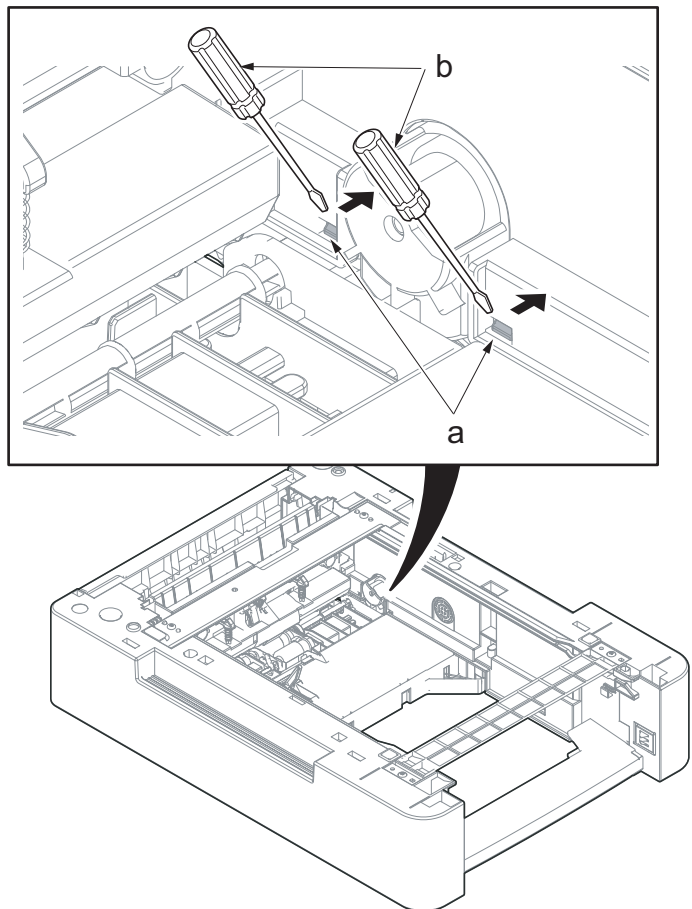


Figure 4-429

11. Lift up the paper feeder (b) and remove the upper cover (a).

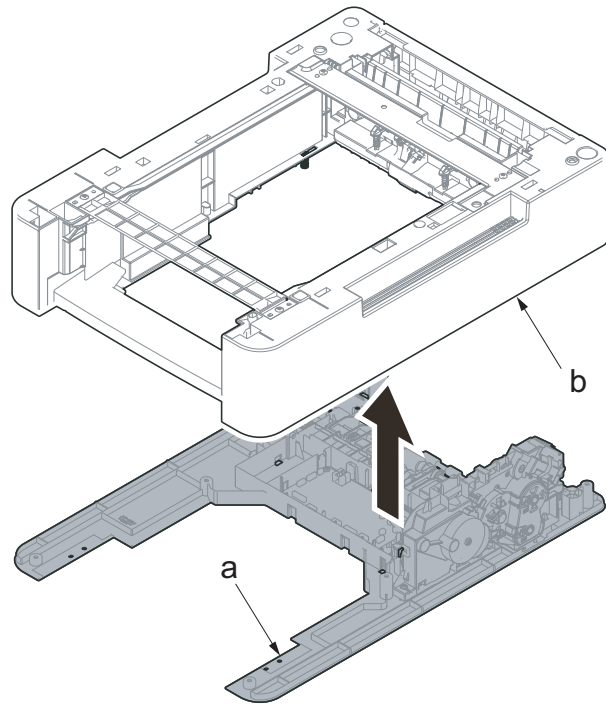


Figure 4-430

12. Push the lock lever (a).
13. Slide the feed roller pin (b) straight and release the lock.

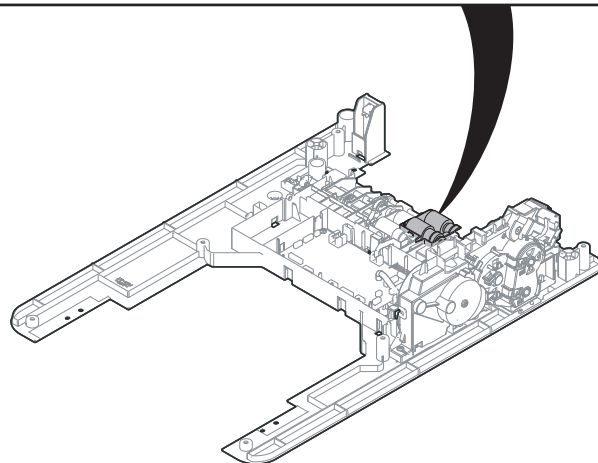
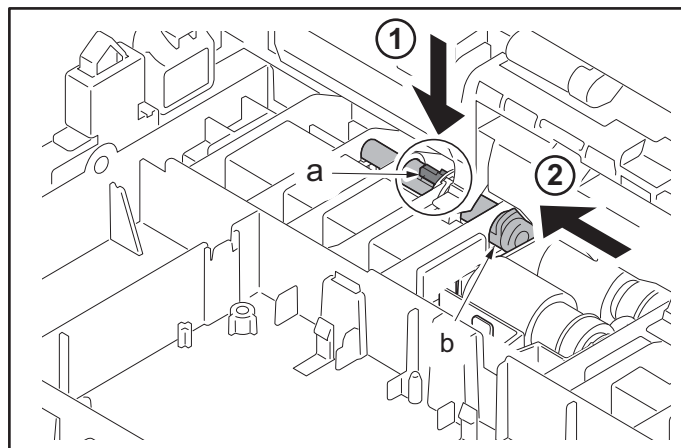


Figure 4-431

- 14. Push the lock lever (a).
- 15. Detach the paper feed roller unit (b).

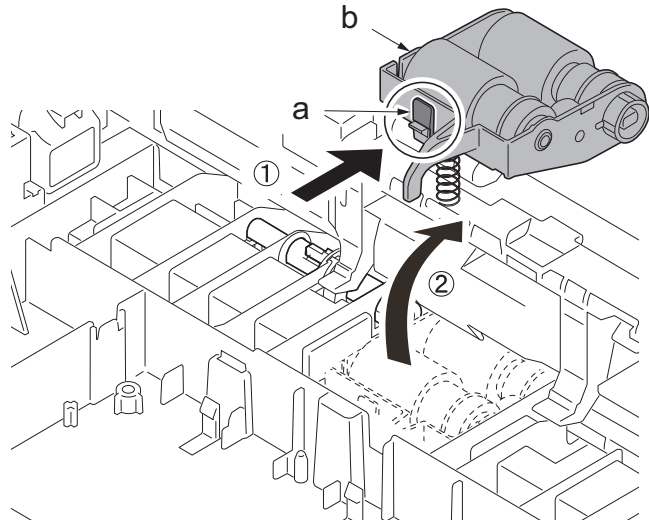


Figure 4-432

- 16. Slide the feed roller drive pin (a) and release it from the drive joint (b).

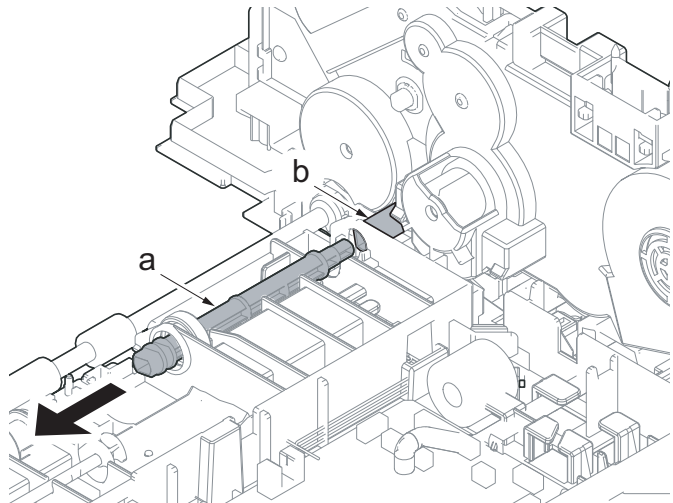


Figure 4-433

- 17. Remove two screws (a)(M3x8).

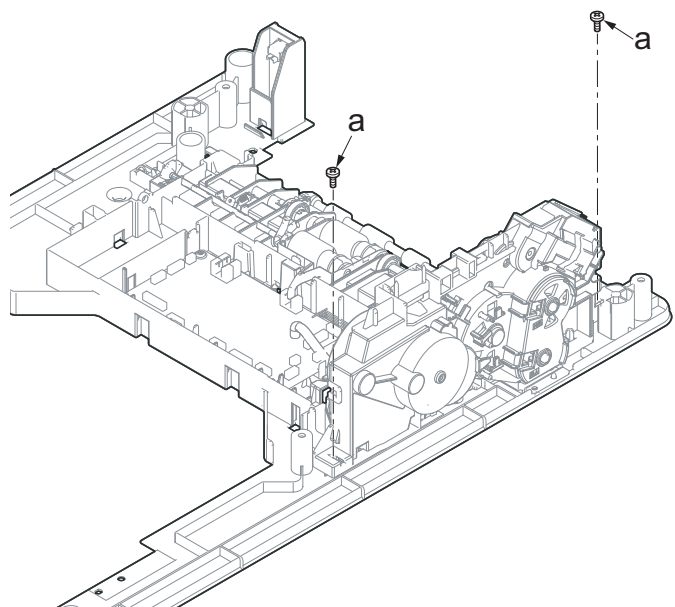


Figure 4-434

18. Release the hook (a) with a flat-blade screwdriver (b) and remove the PF drive unit (c).
19. Check the PF drive unit and clean or replace it if necessary.
20. Reattach the parts in the original position.

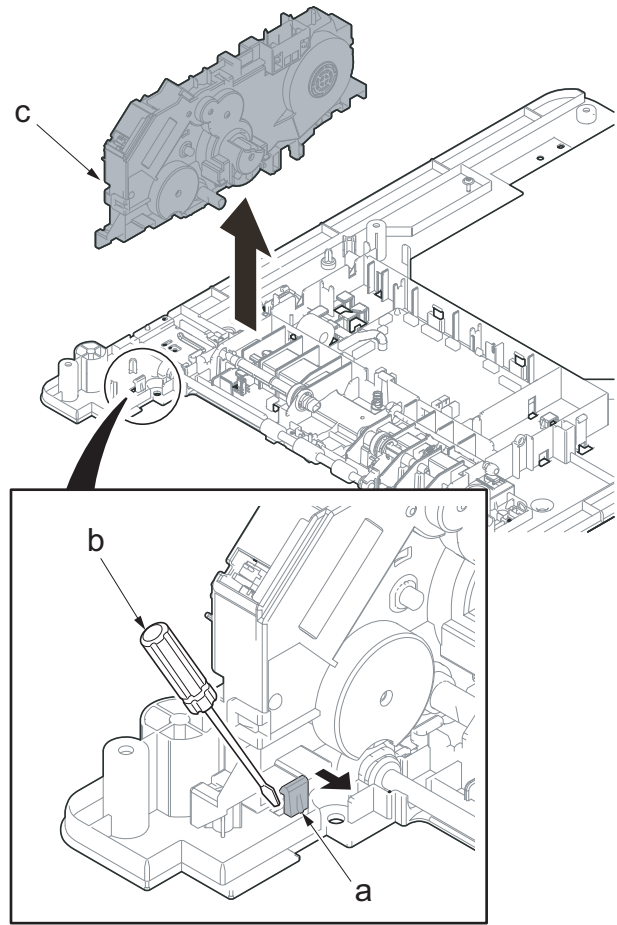


Figure 4-435

**IMPORTANT**

Before attaching the top cover (a), confirm the ground spring (b) is inserted in the hole on the main unit. Attach the spring with its projection facing down.

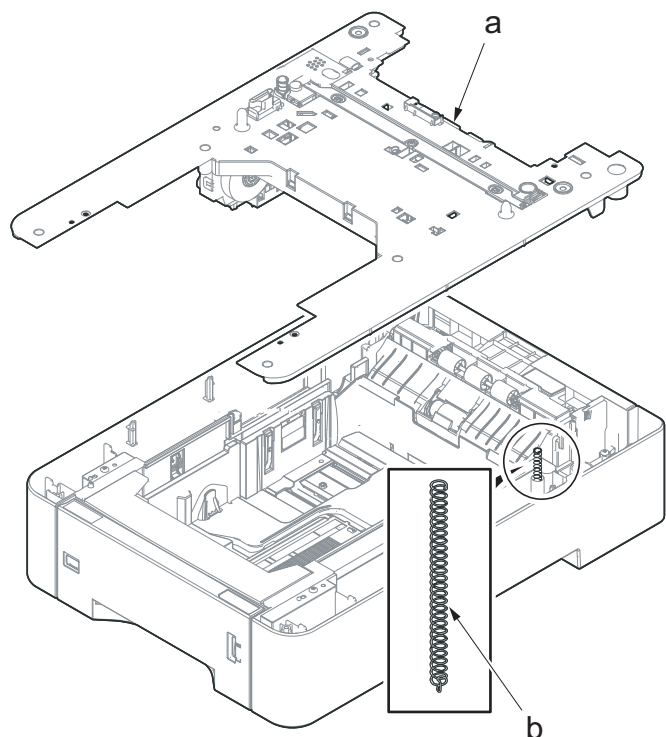


Figure 4-436

## 5 Firmware

### 5-1 Firmware update

Perform the following to update the firmware below.

\*: The processing time is reduced with simultaneous processing by group.

#### [GROUP1 UPDATE]

UPDATE step	Target	Master file name	Message
1	Controller Package	DL_PKG_CTRL.2TV(30 ppm model) DL_PKG_CTRL.2TW(35 ppm model) DL_PKG_CTRL.2TX(40 ppm model)	OPKG
	Product Line Platform	DL_CTRL_PLP.2TV(30 ppm model) DL_CTRL_PLP.2TW(35 ppm model) DL_CTRL_PLP.2TX(40 ppm model)	PLP
	Common Basic App	DL_CTRL_STDAPP_CMN.2TV(30 ppm model) DL_CTRL_STDAPP_CMN.2TW(35 ppm model) DL_CTRL_STDAPP_CMN.2TX(40 ppm model)	CMN
	System Setting App	DL_CTRL_STDAPP_SST.2TV(30 ppm model) DL_CTRL_STDAPP_SST.2TW(35 ppm model) DL_CTRL_STDAPP_SST.2TX(40 ppm model)	SST
	Maintenance App	DL_CTRL_STDAPP_MNT.2TV(30 ppm model) DL_CTRL_STDAPP_MNT.2TW(35 ppm model) DL_CTRL_STDAPP_MNT.2TX(40 ppm model)	MNT
	Print App	DL_CTRL_STDAPP_PRT.2TV(30 ppm model) DL_CTRL_STDAPP_PRT.2TW(35 ppm model) DL_CTRL_STDAPP_PRT.2TX(40 ppm model)	PRT
	Box App	DL_CTRL_STDAPP_BOX.2TV(30 ppm model) DL_CTRL_STDAPP_BOX.2TW(35 ppm model) DL_CTRL_STDAPP_BOX.2TX(40 ppm model)	BOX
	Web Page App	DL_CTRL_STDAPP_WPG.2TV(30 ppm model) DL_CTRL_STDAPP_WPG.2TW(35 ppm model) DL_CTRL_STDAPP_WPG.2TX(40 ppm model)	WPG
	Auth App	DL_CTRL_STDAPP_AUTH.2TV(30 ppm model) DL_CTRL_STDAPP_AUTH.2TW(35 ppm model) DL_CTRL_STDAPP_AUTH.2TX(40 ppm model)	AUTH
	Panel Control System App	DL_CTRL_STDAPP_PCS.2TV(30 ppm model) DL_CTRL_STDAPP_PCS.2TW(35 ppm model) DL_CTRL_STDAPP_PCS.2TX(40 ppm model)	PCS
	Service Cooperation App	DL_CTRL_STDAPP_SCO.2TV(30 ppm model) DL_CTRL_STDAPP_SCO.2TW(35 ppm model) DL_CTRL_STDAPP_SCO.2TX(40 ppm model)	SCO
	Extension Service Platform	DL_CTRL_EXSP.2TV(30 ppm model) DL_CTRL_EXSP.2TW(35 ppm model) DL_CTRL_EXSP.2TX(40 ppm model)	EXSP



UPDATE step	Target	Master file name	Message
1	Package Version Info	DL_CTRL_VINF.2TV(30 ppm model) DL_CTRL_VINF.2TW(35 ppm model) DL_CTRL_VINF.2TX(40 ppm model)	VINF
2	Option Language Data(1)	DL_OPT_xx.2TV (*1)(30 ppm model) DL_OPT_xx.2TX (*1)(35/40 ppm model)	OPT1
3	Option Language Data(2)		OPT2
4	Option Language Data(3)		OPT3
5	Option Language Data(4)		OPT4
6	Option Language Data(5)		OPT5
7	Option Language Data(Erase)	DL_OPT_ER.2TV(30 ppm model) DL_OPT_ER.2TX(35/40 ppm model)	-
8	Color Table Data(Printer1)	DL_PCLT1.2V1	PCT1
9	Color Table Data(Printer2)	DL_PCLT2.2V1	PCT2

\*1: At "xx", alphanumeric characters are input according to the option language.

**[GROUP 2 UPDATE]: No applicable firmware is available.**

**[GROUP3 UPDATE]**

UPDATE step	Target	Master file name	Message
1	Engine Firmware	DL_ENGN.2V1	ENGN
2	Paper Feeder	DL_03PK.2V1	PF

**Verify the signature at firmware update**

Verify the signature of the update file to prevent the firmware update with illegally falsified data.

**File names of the signature and firmware certificate**

Target	model	Signature file name	Firmware certificate file name
Product Line Platform	30 ppm	2TV_CTRL_PLP_sign.bin	2TV_CTRL_PLP_cert.pem
	35 ppm	2TW_CTRL_PLP_sign.bin	2TW_CTRL_PLP_cert.pem
	40 ppm	2TX_CTRL_PLP_sign.bin	2TX_CTRL_PLP_cert.pem
Common Basic App	30 ppm	2TV_CTRL_STDAPP_CMN_sign.bin	2TV_CTRL_STDAPP_CMN_cert.pem
	35 ppm	2TW_CTRL_STDAPP_CMN_sign.bin	2TW_CTRL_STDAPP_CMN_cert.pem
	40 ppm	2TX_CTRL_STDAPP_CMN_sign.bin	2TX_CTRL_STDAPP_CMN_cert.pem
System Setting App	30 ppm	2TV_CTRL_STDAPP_SST_sign.bin	2TV_CTRL_STDAPP_SST_cert.pem
	35 ppm	2TW_CTRL_STDAPP_SST_sign.bin	2TW_CTRL_STDAPP_SST_cert.pe
	40 ppm	2TX_CTRL_STDAPP_SST_sign.bin	2TX_CTRL_STDAPP_SST_cert.pe
Maintenance App	30 ppm	2TV_CTRL_STDAPP_MNT_sign.bin	2TV_CTRL_STDAPP_MNT_cert.pem
	35 ppm	2TW_CTRL_STDAPP_MNT_sign.bin	2TW_CTRL_STDAPP_MNT_cert.pem
	40 ppm	2TX_CTRL_STDAPP_MNT_sign.bin	2TX_CTRL_STDAPP_MNT_cert.pem

Target	model	Signature file name	Firmware certificate file name
Print App	30 ppm 35 ppm 40 ppm	2TV_CTRL_STDAPP_PRT_sign.bin 2TW_CTRL_STDAPP_PRT_sign.bin 2TX_CTRL_STDAPP_PRT_sign.bin	2TV_CTRL_STDAPP_PRT_cert.pem 2TW_CTRL_STDAPP_PRT_cert.pem 2TX_CTRL_STDAPP_PRT_cert.pem
Box App	30 ppm 35 ppm 40 ppm	2TV_CTRL_STDAPP_BOX_sign.bin 2TW_CTRL_STDAPP_BOX_sign.bin 2TX_CTRL_STDAPP_BOX_sign.bin	2TV_CTRL_STDAPP_BOX_cert.pem 2TW_CTRL_STDAPP_BOX_cert.pem 2TX_CTRL_STDAPP_BOX_cert.pem
Web Page App	30 ppm 35 ppm 40 ppm	2TV_CTRL_STDAPP_WPG_sign.bin 2TW_CTRL_STDAPP_WPG_sign.bin 2TX_CTRL_STDAPP_WPG_sign.bin	2TV_CTRL_STDAPP_WPG_cert.pem 2TW_CTRL_STDAPP_WPG_cert.pem 2TX_CTRL_STDAPP_WPG_cert.pem
Auth App	30 ppm 35 ppm 40 ppm	2TV_CTRL_STDAPP_AUTH_sign.bin 2TW_CTRL_STDAPP_AUTH_ - sign.bin 2TX_CTRL_STDAPP_AUTH_sign.bin	2TV_CTRL_STDAPP_AUTH_cert.pem 2TW_CTRL_STDAPP_AUTH_cert.pem 2TX_CTRL_STDAPP_AUTH_cert.pem
Panel Control System App	30 ppm 35 ppm 40 ppm	2TV_CTRL_STDAPP_PCS_sign.bin 2TW_CTRL_STDAPP_PCS_sign.bin 2TX_CTRL_STDAPP_PCS_sign.bin	2TV_CTRL_STDAPP_PCS_cert.pem 2TW_CTRL_STDAPP_PCS_cert.pem 2TX_CTRL_STDAPP_PCS_cert.pem
Service Cooperation App	30 ppm 35 ppm 40 ppm	2TV_CTRL_STDAPP_SCO_sign.bin 2TW_CTRL_STDAPP_SCO_sign.bin 2TX_CTRL_STDAPP_SCO_sign.bin	2TV_CTRL_STDAPP_SCO_cert.pem 2TW_CTRL_STDAPP_SCO_cert.pem 2TX_CTRL_STDAPP_SCO_cert.pem
Extension Service Platform	30 ppm 35 ppm 40 ppm	2TV_CTRL_EXSP_sign.bin 2TW_CTRL_EXSP_sign.bin 2TX_CTRL_EXSP_sign.bin	2TV_CTRL_EXSP_cert.pem 2TW_CTRL_EXSP_cert.pem 2TX_CTRL_EXSP_cert.pem
Package Version Info	30 ppm 35 ppm 40 ppm	2TV_CTRL_VINF_sign.bin 2TW_CTRL_VINF_sign.bin 2TX_CTRL_VINF_sign.bin	2TV_CTRL_VINF_cert.pem 2TW_CTRL_VINF_cert.pem 2TX_CTRL_VINF_cert.pem
Option Language Data(1)	30 ppm 35/40 ppm	2TV_OPT_xx_sign.bin (*1) 2TX_OPT_xx_sign.bin (*1)	2TV_OPT_xx_cert.pem (*1) 2TX_OPT_xx_cert.pem (*1)
Option Language Data(2)			
Option Language Data(3)			
Option Language Data(4)			
Option Language Data(5)			
Option Language Data(Erase)	30 ppm 35/40 ppm	2TV_OPT_ER_sign.bin 2TX_OPT_ER_sign.bin	2TV_OPT_ER_cert.pem 2TX_OPT_ER_cert.pem
Color Table Data(Printer1)		2V1_PCLT1_sign.bin	2V1_PCLT1_cert.pem
Color Table Data(Printer2)		2V1_PCLT2_sign.bin	2V1_PCLT2_cert.pem
Engine Firmware		2V1_ENGN_sign.bin	2V1_ENGN_cert.pem
Paper Feeder		2V1_03PK_sign.bin	2V1_03PK_cert.pem

## Preparations

Unzip the file containing the downloaded firmware and then copy the firmware and high-speed master file (skip files: ES\_SKIP.ON) in [FWUP\_02TV] folder \*1 or [FWUP\_02TW] folder \*2 or [FWUP\_02TX] folder \*3 of the root folder of the USB memory.

\*1: for 30 ppm model, \*2: for 35 ppm model, \*3: for 40 ppm model

\*: If the high-speed master file exists, the same version firmware update is skipped.

1. After turning the power switch (a) on, the screen is properly displayed and then turn the power switch (a) off.
2. Insert the USB memory (b) with the firmware into the USB memory slot (c) and turn the power switch (a) on.

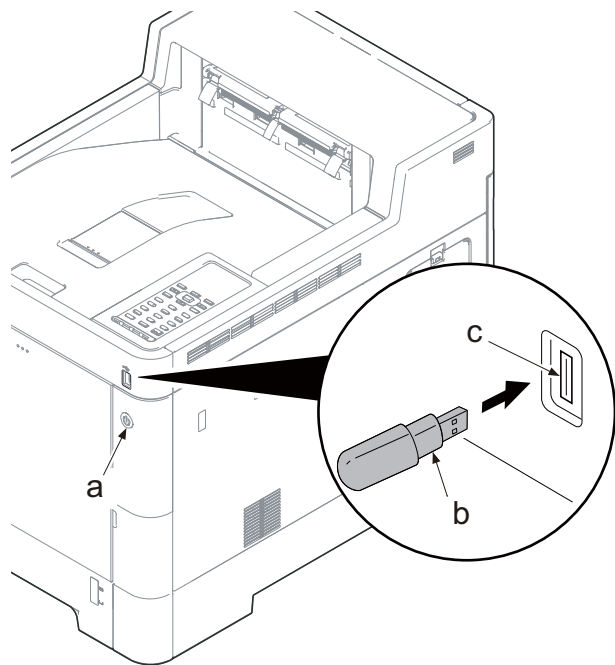


Figure 1-5-1

\*: [FW-UPDATE] is parallelly processed and the progress is displayed.

### Display sample

First line: Displays "FW-Update".

Second line: Progress indicator of the firmware update.



3. After the firmware update is successful, the first page displays the completion message and the following pages display the target firmware and the updated version.

### (First page)

First line: Displays "FW-Update", (page number/total number of pages).

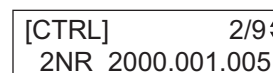
Second line: Displays "Completed". (Completion message)



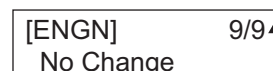
### (Second page and later)

First line: Displays "CTRL", (character string corresponding to UPDATE target), (page number/total number of pages), the up and down key icon.

Second line: Displays the target firmware and the updated version.



\*: When there is no corresponding master file, "No Change" is displayed.



\*: [-----] is displayed when the optional equipment is not installed.

[PF1]	6/9
-----	

\*: "\*" is displayed after the update target name if it has skipped.

[CTRL] *	2/9
2NR_2000.001.005	

**For the case of an error**

When an error occurs during the firmware upgrade, the process is immediately interrupted and the error code and error message are indicated.

**First page**

First line: Displays "FW-Update", (page number/total number of pages), the up and down key icon.  
Second line: Displays "Error".

FW-Update	1/9
Error	

**Second page and later**

First line: Displays "ENGN", (the target firmware), (page number/total number of pages), the up and down key icon.  
Second line: Displays "Error", the error code

[ENGN]	9/9
Error	0100

Codes	Description	Codes	Description
0000	Others	S000	Other signature verification error *1
0100	No Master file	S001	Signature verification file is inadequate
0200	Version mismatch of the master file	N001	Network connection failed. *2 (There is no upgrade target interrupted)
03xx	No Download File (No.xx)		
04xx	File (No.xx) Checksum mismatch	N002	Network connection failed. *3 (There is an upgrade target interrupted)
05xx	File (No.xx) Preparation failure		
x6xx	File (No.xx) Oversize		
08xx	File (No.xx) Writing failure		

\*1: Including the expired FM certificate.

\*2: Automatically restarted for the normal start-up since the normal start-up is available next time.

\*3: Transferred to the USB upgrade mode instead of the automatic restart since the normal start-up may not be available next time.

**Indication of the signature verification result**

Official signature verification file	Indicate the result
Both certificate and signature files exist and verification is successful.	Version number
Both certificate and signature files exist but verification is unsuccessful.	S000
Neither certificate nor signature files exist. Or either of them does not exist.	S001

4. Check if the new firmware versions are displayed.
5. Unplug the power cord and disconnect the USB memory.
6. After plugging in the power cord, check that the screen is displayed and then turn the power switch off

**Note**

Never turn the power switch off or disconnect the USB memory during the firmware update.

**Safe-Update**

When the firmware update was interrupted by power shut-off or disconnecting the USB memory during the firmware update, the firmware update is retried at the next power-on.

Turn the main power on again while the USB memory is installed.

\*: The firmware update that was already completed before power shut-down is skipped.

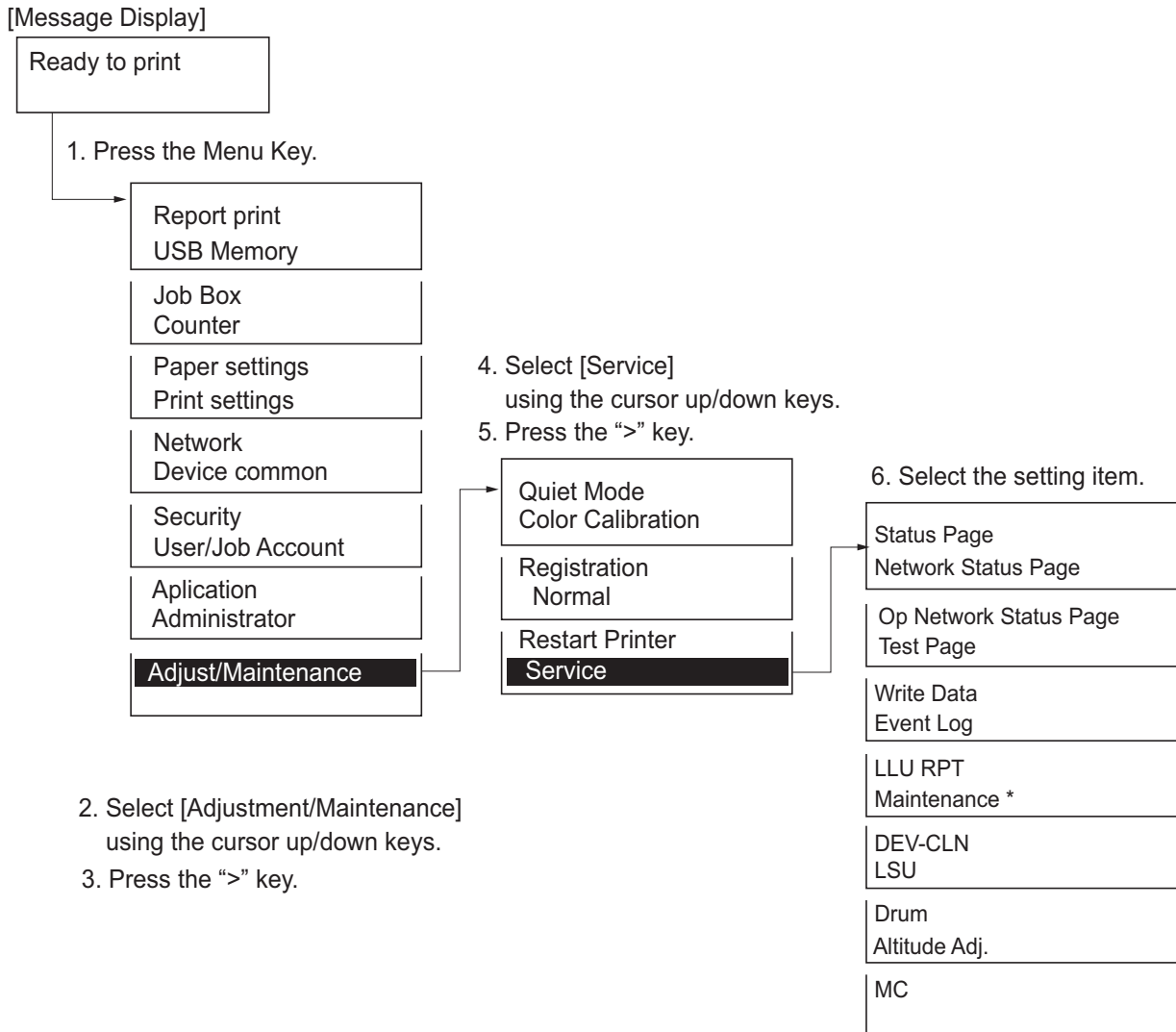
## 6 Service mode

### 6-1 Service mode

The machine is equipped with a maintenance function which can be used to maintain and service the machine.

#### (1) Executing the service mode (30/35 ppm model)

##### 30 ppm model



\*:When the replacement time comes  
It is displayed on the system menu

**Service setting**

<b>Items</b>	<b>Description</b>	<b>Page</b>
<b>Output of Status Page</b>	Outputs the service status page.	P.6-3
<b>Output Network Status Page</b>	Outputs the network status page.	P.6-11
<b>Output Optional Network Status Page</b>	Outputs the optional network status page.	P.6-11
<b>Output Test Page</b>	Output the test page drawn with the halftone.	P.6-12
<b>Write Data</b>	Writes the data to a USB memory.	P.6-13
<b>Printing the event log</b>	Outputs the event log report.	P.6-13
<b>Printing the LLU report</b>	Outputs the LLU report.	P.6-19
<b>Maintenance</b>	Counter reset for the maintenance kit.	P.6-20
<b>DEV-CLN</b>	Perform developer refreshing.	P.6-21
<b>LSU</b>	Clean the LSU dust shield glass.	P.6-22
<b>Drum</b>	Clean the drum surface.	P.6-22
<b>Altitude Adjustment</b>	Perform the altitude Adjustment Setting.	P.6-23
<b>MC</b>	Sets the main charger output.	P.6-23



## (2) Descriptions of service modes

### Output of Status Page

**Description**

Printing a service status page. The status page includes various settings and service data.

**Purpose**

This is used to retrieve the setting environment information and service data.

**Method**

1. Enter the Service Setting menu.
2. Select [Service Status Page].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].) (35 ppm model)
5. Service status page will be printed.

**Completion**

Press [Menu] key. (30 ppm model)

By the right selection key, select [Exit]. (35 ppm model)

Detail of service status page (1)



# Service Status Page

Printer  
ECOSYS P6230cdn

(2) Z237400009  
(3) 2017/09/16 14:30

(1) Firmware Version 2TV\_S000.001.260 2017.09.01 (4)(5)(6) [2V1\_1000.001.020] [2V1\_1100.001.001] [2TV\_7000.001.216]

## Controller Information

### Memory Status

- (7) Standard Size 1.0 GB
- (8) Option Slot 0 MB
- (9) Total Size 1.0 GB

### Time

- (10) Local Time Zone  
GMT Greenwich Mean Time: Dublin, Edinburgh, Lisbon, London
- (11) Date and Time 2017/11/14 01:46
- (12) Time Server

### Installed Options

- (13) Paper Feeder 2 Not Installed
- (14) Paper Feeder 3 Not Installed
- (15) Paper Feeder 4 Not Installed
- (16) SD Card Not Installed
- (17) SSD Not Installed
- (18) Card Authentication Kit (B) Not Installed
- (19) Data Security Kit (E) Not Installed
- (20) UG-33 Not Installed

### Print Coverage

- (21) Average (%) / Usage Page(A4/Letter Conversion)
- (22) Total
- K(Total): 0.00 / 0.00
- K(Color) : 0.00 / 0.00
- K(B&W): 0.00 / 0.00
- C: 0.00 / 0.00
- M: 0.00 / 0.00
- Y: 0.00 / 0.00

- (23) Period (2017/06/23 - 2017/07/03 01:46)
- (24) Last Page (%) 0.00
- (25) Last Job (%) 0.00
- Total K (%) 0.00
- Color K/C/M/Y (%) 0.00 / 0.00 / 0.00 / 0.00
- B&W K (%) 0.00

### (26) FRPO Status

Reserved	B0	00
Reserved	B7	00
Default Pattern Switch	B8	00
Page Orientation	C1	00
Default Font Number	C5*10000+C2*100+C3	00000
PCL Font Switch	C8	00
Reserved	D6	03
Host Buffer Size	H8	05
FF Time Out	H9	06
Reserved	I5	01
Reserved	I6	00
KIR Mode	N0	02
Duplex mode	N4	00
Sleep Timer	N5	120
EcoPrint Mode	N6	00
Reserved	N7	00
Print Resolution	N8	01
Default Emulation	P1	06
CR/LF Action	P2/P3	1/1
AES Mode	P4	00
AES Option 1/2	P7	10
Command Recognition	P9	82
Default Paper Output	R0	01
Default Paper Size	R2	00

Reserved	R3	00
Default Paper Source	R4	01
MP Tray Paper Size	R7	01
Override A4/LT	S4	01
Host Buffer Size Rate	S5	01
RAM Disk Size	S6	128
RAM Disk Mode	S7	01
Wide A4	T6	00
Default Line Spacing	U0+U1/100	6.00
Default Character Spacing	U2+U3/100	10.00
Reserved	U4	01
Country Code/Symbol Set	U6/U7	41/53
Default Pitch	U8+U9/100	10.00
Default Font Height	V0*100+V1+V2/100	12.00
Default Font Name	V3	Courier
Courier/LetterGothic	V9	05
Color Mode	W1	01
Gloss Mode	W6	00
MP Tray Paper Type	X0	01
Cassette 1 Paper Type	X1	01
Cassette 2 Paper Type	X2	01
Cassette 3 Paper Type	X3	01
Cassette 4 Paper Type	X4	01
PCL Paper Source	X9	00
Auto Error Clear	Y0	00
Error Clear Timer	Y1	06
Finishing error	Y3	127
Special Type Act Mode	Y4	00
PDF mode	Y5	00
e-MPS error control	Y6	03


Figure 6-6

Detail of service status page (2)

# Service Status Page

**Printer**  
**ECOSYS P6230cdn**

Firmware Version 2TV\_S000.001.260 2017.09.01



Z237400009  
2017/09/16 14:30

---

**Controller Information**

(27)RP Code  
0008 01E2 3177  
0008 027A C873  
FFFF FFFF FFFF  
0008 01E2 31F5

**Engine Information**

(30) NVRAM Version                   \_Cb26630\_Cb26630  
(31) MAC Address                    00:17:C8:16:84:04

(28)Altitude Adjustment    Status                    Normal  
      Status

(29)System Firmware(Details)

- 2V1\_Q000.001.146
- 2V1\_QA00.001.146
- 2V1\_R000.001.146
- 2V1\_R100.001.146
- 2V1\_R200.001.146
- 2V1\_R300.001.146
- 2V1\_R400.001.146
- 2V1\_R500.001.146
- 2V1\_R600.001.146
- 2V1\_R700.001.146
- 2V1\_R800.001.146
- 2V1\_R900.001.146
- 2V1\_RB00.001.146
- 2V1\_RD00.001.146
- 2V1\_S100.001.146

---

2

Figure 6-7



No.	Items	Description
(1)	Firmware Version	-
(2)	Machine serial number	-
(3)	System date	-
(4)	Engine software version	-
(5)	Engine boot version	-
(6)	Operation panel software version	-
(7)	Standard memory size	-
(8)	Optional memory size	-
(9)	Total memory size	-
(10)	Local time zone	-
(11)	Report output date	Day/Month/Year hour:minute
(12)	NTP server name	-
(13)	Availability of the optional paper feeder 2	Installed/Not Installed
(14)	Availability of the optional paper feeder 3	Installed/Not Installed
(15)	Availability of the optional paper feeder 4	Installed/Not Installed
(16)	Availability of the SD card	Installed/Not Installed
(17)	Availability of the SSD	Installed/Not Installed
(18)	Availability of the UG-33	Installed/Not Installed/Trial
(19)	Availability of the Security Kit(E)	Installed/Not Installed
(20)	Availability of the UG-33	Installed/Not Installed/Trial
(21)	Page count converted to the A4/Letter size	Print Coverage provides a close-matching reference of toner consumption and will not match the actual toner consumption.
(22)	Entire average coverage	Black/Cyan/Magenta/Yellow
(23)	Cleared date and output date	-
(24)	Coverage on the last output page	-
(25)	Coverage on the last output job	-
(26)	FRPO setting	-
(27)	RP code	<p>Code the engine firmware version and the date of the latest update.</p> <p>Code the main firmware version and the date of the latest update.</p> <p>Code the engine firmware version and the date of the previous update.</p> <p>Code the main firmware version and the date of the previous update.</p>

No.	Items	Description
(28)	Altitude Adjustment	Normal/1001-2000m/2001-3000m/3001-3500m
(29)	System Firmware (detail)	-
(30)	NVRAM version	<p>_ 1F3 1225 _ 1F3 1225            (a)(b)(c)(d)(e)(f)            (a) Consistency of the current firmtware version and the database              _ (underscore): OK              * (Asterisk): NG            (b) Database version            (c) The oldest time stamp of database version            (d) Consistency of the current firmware version and the ME firmware version              _ (underscore): OK              * (Asterisk): NG            (e) ME firmware version            (f) The oldest time stamp of the ME firmware version            Normal if (a) and (d) are underscored, and (b) and (e) are identical with (c) and (f).</p>
(31)	Mac address	-
(32)	Destination information	-
(33)	Area information	-
(34)	Margin setting	Top margin/Left margin
(35)	Top offset for each cassette	MP tray Top offset/ Paper feeder 2 Top offset/ Paper feeder 3 Top offset/ Paper feeder 4 Top offset/ Duplex Top offset Rotation copy Top offset
(36)	Left offset for each cassette	MP tray Left offset/ Paper feeder 2 Left offset/ Paper feeder 3 Left offset/ Paper feeder 4 Left offset/ Duplex Left offset / Rotation copy Left offset
(37)	L parameters	Top margin integer part/Top margin decimal part/Left margin integer part /Left margin decimal part
(38)	Life counter (The first line)	Machine life/MP tray/Paper feeder 1/Paper feeder 2/ Paper feeder 3/Paper feeder 4/Duplex
	Life counter (The second line)	Drum unit K/Drum unit C/Drum unit M/Drum unit Y/Pri- mary transfer unit/Developer unit K/Developer unit C/ Developer unit M/Developer unit Y/Maintenance kit A
(39)	Panel lock information	F00: OFF F01: Partial lock1 F02: Partial lock2 F03: Partial lock3 F04: Full lock
(40)	USB information	U00: Not Connected U01: Full speed U02: Hi speed

No.	Items	Description
(41)	Paper handling information	0: Paper source select 1: Paper source fixed
(42)	Auto cassette change	0: OFF 1: ON (Default)
(43)	Color printing double count mode	0: All single counts 3: Less than Folio (330mm length), Single counts
(44)	Black and white printing double count mode	0: All single counts 3: Less than Folio (330mm length), Single counts
(45)	Billing counts timing	0: When secondary paper feed starts 1: When the paper is ejected
(46)	Temperature (machine inside)	-
(47)	Temperature (machine outside)	-
(48)	Relative humidity (machine outside)	-
(50)	Absolute humidity (machine outside)	-
(51)	Machine inside humidity	-
(52)	LSU1 temperature information	-
(53)	LSU2 temperature information	-
(54)	DRT information	-
(55)	Fixed assets number	-
(56)	Job end judgment time-out time	-
(57)	Job end detection mode	0: Detects as one job, even if contained multiple jobs 1: Detects as individual job, dividing multiple jobs at a break in job
(58)	Prescribe environment reset	0: Off 1: On
(59)	Media type attributes 1 to 28 (Not used: 18, 19, 20)  *: For details on settings, refer to MDAT command in "Prescribe Commands Reference Manual".	Weight settings      Fuser settings 0: Light                0: High 1: Normal 1            1: Middle 2: Normal 2            2: Low 3: Normal 3            3: Vellum 4: Heavy 1 5: Heavy 2              Duplex settings 6: Heavy 3              0: Disable 7: Extra Heavy        1: Enable
(60)	Calibration information	-
(61)	RFID information	-
(62)	Toner install mode information	0: Off 1: On
(63)	Paper feeder firmware version	-
(64)	Optional message version	-
(65)	Color table version	-
(66)	Maintenance information	-



No.	Items	Description
(67)	Altitude adjustment mode	
(68)	MC correction	1 to 7
(69)	Auto judgment of the color conversion processing	
(70)	Configuring the toner coverage counters	0: Full-color count display 1: Color coverage count display
(71)	Low coverage setting	0.1 to 100.0
(72)	Middle coverage setting	0.1 to 100.0
(73)	Toner low setting	0: Disabled 1: Enabled
(74)	Toner low detection level	5 to 100 (%)
(75)	Full-page print mode	0: Normal mode (Factory setting) 1: Full-page mode
(76)	Wake-up mode	0: OFF (Don't wake up) 1: On (Do wake up)
(77)	Drum serial number	Black/Cyan/Magenta/Yellow
(78)	Developer serial number	Black/Cyan/Magenta/Yellow

## Network Status

### Description

Printing a network status page.

### Purpose

To acquire the detailed network setting information.

### Method

1. Enter the Service Setting menu.
2. Select [NW Status].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].) (35 ppm model)
5. Network status page will be printed.

### Completion

Press [Menu] key. (30 ppm model)

By the right selection key, select [Exit]. (35 ppm model)

## OP Network Status \* When Optional NIC is installed

### Description

Printing an OP Network status page.

### Purpose

To acquire the detailed OP Network setting information.

### Method

1. Enter the Service Setting menu.
2. Select [OP NW Status].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].)
5. OP Network status page will be printed.

### Completion

Press [Menu] key. (30 ppm model)

By the right selection key, select [Exit]. (35 ppm model)

**Test Page**

**Description**

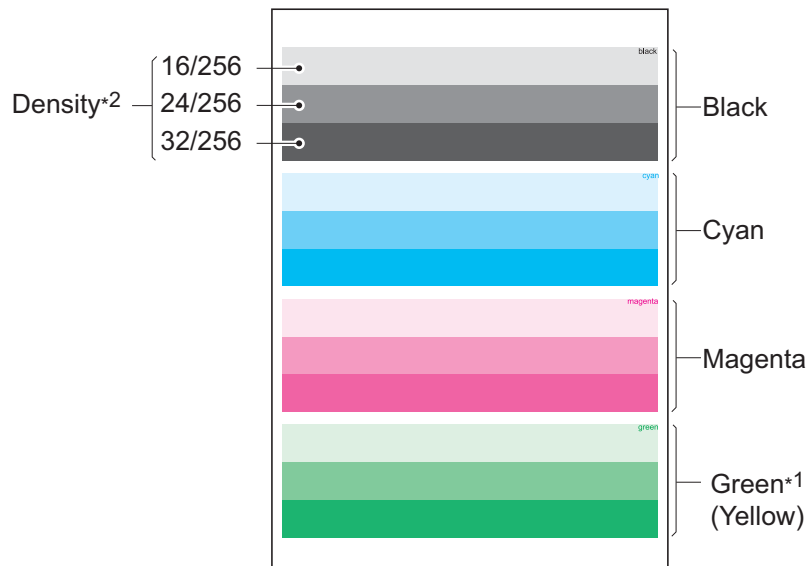
Outputs the test page which is printed in four colors respectively with halftones of three different levels.

**Purpose**

When the image failure occurs, output the test page in order to judge the cause.

**Method**

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Test Page].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].) (35 ppm model)
5. Test page is printed.



**Figure 6-9**

\*1: Since focusing in yellow is hardly readable, yellow is mixed with cyan for more readability, resulting in green.

\*2: Four colors are printed respectively with halftones of three different levels (bands). If focus is excessively lost, dots are not recognizable with the 16/256 band, resulting in uneven density. It also results in vertical streaks (white or black) in the 24/256 and/or 32/256 bands.

**Completion**

- Press [Menu] key. (30 ppm model)  
By the right selection key, select [Exit]. (35 ppm model)

## Write Data

### Description

Writes the data to a USB memory.

Execution is possible only when a USB memory is detected.

### Method

Install the USB memory before attempting to write data.

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Write Data].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].) (35 ppm model)
5. [Data waiting] is displayed and the printer waits for data to be written.
6. When the data is sent, [Processing] appears and the data is written to USB memory. When data writing ends, the display returns to [Ready].

### Completion

Press [Menu] key. (30 ppm model)

By the right selection key, select [Exit]. (35 ppm model)

## Printing the event log

### Description

Prints a history list of occurrences of paper jam, self-diagnostics, toner replacements, etc.

### Purpose

To allow machine malfunction analysis based on the history list of occurrences.

### Method

1. Enter the Service Setting menu.
2. Select [Event log].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (35 ppm model)
5. Event log is printed.

### Completion

Press [Menu] key. (30 ppm model)

By the right selection key, select [Exit]. (35 ppm model)

Detail of event log

## Event Log

**PRINTER**  
**ECOSYS P6230cdn**

**Z237400100**  
(2) 2017/09/19 15:15

---

(1) Firmware version 2TV\_S000.001.260 2017.09.04

[XXXXXXXX] [XXXXXXXX] [XXXXXXXX]

(3) (4) (5)

---

(6) Machine No.:Z237400100

(7) Total Life Count:2188

(8) Color Life Count:2188

---

**(9) Paper Jam Log**

#	Count.	Event Descriptions	Date and Time
12	5555( 5558)	0501.01.08.01.00	2014/02/12 17:30
11	4444( 4448)	4002.01.08.01.00	2014/02/12 17:30
10	3333( 3338)	0501.01.08.01.00	2014/02/12 17:30
9	2222( 2228)	4002.01.08.01.00	2014/02/12 17:30
8	1111( 1118)	0501.01.08.01.00	2014/02/12 17:30
7	999( 998)	4002.01.08.01.00	2014/02/12 17:30
6	88( 88)	0501.01.08.01.00	2014/02/12 17:30
5	77( 77)	4002.01.08.01.00	2014/02/12 17:30
4	66( 66)	0501.01.08.01.00	2014/02/12 17:30
3	55( 55)	4002.01.08.01.00	2014/02/12 17:30
2	44( 44)	0501.01.08.01.00	2014/02/12 17:30
1	3333( 338)	4002.01.08.01.00	2014/02/12 17:30

**(11) Maintenance Log**

#	Count.	Item.	Date and Time
2	4444( 5558)	02.01	2014/02/12 17:30
1	2222( 5558)	02.02	2014/02/12 17:30

0501.01.08.01.00				
(a)	(b)	(c)	(d)	(e)

---

**(10) Service Call Log**

#	Count.	Service Code	Date and Time
8	9999( 9998)	01.00.0100	2014/07/05 10:00
7	8888( 8888)	02.01.0100	2014/07/04 10:00
6	7777( 7778)	01.01.0000	2014/06/26 10:00
5	6666( 6668)	01.00.0000	2014/05/01 10:00
4	5555( 5558)	01.01.0000	2014/04/05 10:00
3	4444( 4448)	02.00.0000	2014/02/21 10:00
2	3333( 3338)	02.00.0000	2013/11/30 10:00
1	2222( 2228)	01.00.0000	2013/11/24 10:00

**(12) Toner Log**

#	Count.	Item	Serial Number	Date and Time
5	9999( 9998)	01.00	0123456789ABCDEF	2014/05/01 10:00
4	8888( 8888)	01.00	0123456789ABCDEF	2014/04/05 10:00
3	7777( 7778)	01.00	0123456789ABCDEF	2014/02/21 10:00
2	6666( 6668)	01.00	0123456789ABCDEF	2013/11/30 10:00
1	5555( 5558)	01.00	0123456789ABCDEF	2013/11/24 10:00

---

1

Figure 6-10

# Event Log

PRINTER

**ECOSYS P6230cdn**

Firmware version 2TV\_S000.001.260 2017.09.04



Z237400100

2017/09/19 15:15

[XXXXXXXXXX] [XXXXXXXXXX] [XXXXXXXXXX]

Machine No.:Z237400100

Total Life Count:2188

Color Life Count:2188

## (12) Counter Log

(f) J0000:	0	J4302:	0
J0100:	1	J4303:	1
J0101:	11	J4304:	11
J0104:	222	J4309:	2
J0105:	1	J9000:	1
J0106:	1	J9004:	0
J0107:	1	J9010:	1
J0110:	1	J9060:	1
J0111:	1	J9061:	2
J0211:	1	J9062:	1
J0212:	1	J9110:	1
J0213:	999	J9120:	0
J0501:	1	J9200:	1
J0502:	1	J9210:	1
J0503:	1	J9220:	2
J0504:	1		
J0508:	1	(g) C0000:	0
J0509:	1	C0001:	1
J0511:	1	C0002:	2
J0512:	1	C0003:	3
J0513:	1	C0004:	4
J0514:	1	C0005:	5
J0518:	1	C0006:	6
J0519:	1	C0007:	7
J1403:	1	C0008:	8
J1404:	1	C0009:	9
J1413:	1	C0010:	10
J1414:	1	CF245:	11( 0)
J1604:	1	CF248:	12( 0)
J1614:	1	CF345:	13( 0)
J4002:	1	(h) T00:	10
J4003:	1	M00:	20
J4004:	1	M02:	30
J4009:	1		
J4012:	1		
J4013:	1		
J4014:	1		
J4019:	1		
J4201:	1		
J4202:	0		
J4203:	1		
J4204:	1		
J4208:	0		
J4209:	1		
J4211:	11		
J4212:	222		
J4213:	1		
J4214:	2		
J4218:	1		
J4219:	2		
J4301:	1		

Figure 6-11

**Description of event log**

No.	Description			
(1)	System version			
(2)	System date			
(3)	Engine software version			
(4)	Engine boot version			
(5)	Operation panel firmware version			
(6)	Machine serial number			
(7)	Total life counter			
(8)	Color life counter			
(9)	<b>Paper Jam Log</b>			
	<b>#</b>	<b>Count.</b>	<b>Event</b>	<b>Date and Time</b>
	Remembers 1 to 16 of occurrence. : If the occurrence of the previous diagnostic error is 16 or less, all of the diagnostics errors are logged. The oldest log is deleted when exceeding 16 events.	The total page count at the time of paper jam. (xxxxx): total color page count.	Log code (5 types in hexadecimal)  (a) Cause of paper jam (b) Paper source (c) Paper size (d) Paper type (e) Paper eject	Date and time of occurrence
	(a) Detail of Cause of paper jam (Hexadecimal)			
	: For the detail of paper jam cause, refer to "7-2 Paper Mis feed Detection". (P.7-34)			
	(b) Detail of paper source (Hexadecimal)			
	00: MP tray 01: Cassette 1 02: Cassette 2 (paper feeder) 03: Cassette 3 (paper feeder) 04: Cassette 4 (paper feeder) 05 to 09: Reserved			
	(c) Detail of paper size (Hexadecimal)			
	00: Not specified 01: Monarch 02: Business 03: International DL 04: International C5 05: Executive 06: Letter-R 86: Letter-E 07: Legal 08: A4R 88: A4E 09: B5R 89: B5E 0A: A3	0B: B4 0C: Ledger 0D: A5R 0E: A6 0F: B6 10: Commercial #9 11: Commercial #6 12: ISO B5 13: Custom size 1E: C4 1F: Hagaki 20: Oufuku Hagaki 21: Oficio II	22: Special 1 23: Special 2 24: A3 wide 25: Ledger wide 26: Full bleed paper (12 x 8) 27: 8K 28: 16K-R A8: 16K-E 32: Statement-R B2: Statement-E 33: Folio 34: Youkei type 2 35: Youkei type 4	

No.	Description			
<b>(9)</b> cont.	<b>Paper Jam Log</b>			
	(d) Detail of paper type (Hexadecimal)			
	01: Plain 02: Transparency 03: Preprinted 04: Labels 05: Bond 06: Recycled 07: Vellum 08: Rough 09: Letterhead	0A: Color 0B: Prepunched 0C: Envelope 0D: Cardstock 0E: Coated 0F: 2nd side 10: Media 16 11: High quality	15: Custom 1 16: Custom 2 14: Custom 3 18: Custom 4 19: Custom 5 1A: Custom 6 1B: Custom 7 1C: Custom 8	
	(e) Detail of paper source (Hexadecimal)			
	01: Main unit face down (FD)			
<b>(10)</b>	<b>Service Call Log</b>			
	<b>#</b>	<b>Count.</b>	<b>Service Code</b>	<b>Date and Time</b>
Remembers 1 to 8 of occurrence. : If the occurrence of the previous diagnostic error is 8 or less, all of the diagnostics errors are logged.	The total page count at the time of the self diagnostic error. (xxxxx): total color page count.	The first two digits (identification) 01: Service call / System error 02: Unit replacement  Next two digits (Auto reboot information) 00: Without auto reboot 01: Auto reboot execution  Last four digits Self diagnostic error code (See page P.7-82)  (Example) 01.00.6000 01 indicates Self diagnostic error, 00 without auto reboot and 6000 Self diagnostic error code. U287 sets the auto reboot function.	Date and time of occurrence	



No.	Description			
(11)	<b>Maintenance Log</b>			
	<b>#</b>	<b>Count.</b>	<b>item</b>	<b>Date and Time</b>
Remembers 1 to 8 of occurrence. *: If the occurrence of the previous replacement of the maintenance replacing item is 8 or less, all of the occurrences of replacement are logged.	Total page count at the time of the replacement of the maintenance replacement item. (xxxxx): total color page count.  : The toner replacement log is triggered by toner empty. This record may contain such a reference as the toner container is inserted.	Maintenance item code (1-byte value to indicate 2 items)  First byte (Replacing item) 02: Maintenance kit Second 1 byte (Replacing item type) 01: MK-5141 (30 ppm model only) MK-5291 (40 ppm model only)	Date and time of occurrence	
(12)	<b>Toner Log</b>			
	<b>#</b>	<b>Count.</b>	<b>item. Serial Number</b>	<b>Date and Time</b>
Remembers 1 to 32 of occurrence of unknown toner detection. : If the occurrence of the previous diagnostic error is 32 or less, all of the diagnostics errors are logged.	When using the non-genuine toner container, record the log at occurrence of the toner container replacement (total page count). (xxxxx): total color page count.	log code First 1byte(Replacing item) 01: Genuine product 02: Non-genuine product  Next 1byte (type of replacement item) 00: Black 01: Cyan 02: Magenta 03: Yellow  Last 16 digits Display the serial number of the toner container.	Date and time of occurrence	

No.	Description			
(13)	<b>Counter Log</b>			
	<p>(f) Paper jam</p> <p>Indicates the log counter of paper jams depending on location. Refer to Paper Jam Log.</p> <p>: All instances including those not having occurred are displayed.</p>	<p>(g) Self diagnostic error</p> <p>Indicate the log counter of the self diagnostics errors depending on cause.</p> <p>The number of auto reboot is also displayed at the service call/system error.</p> <p>Example: C6000: 4 Self diagnostic error 6000 occurred four times.</p>	<p>(h) Maintenance replacement item</p> <p>Indicate the log counter depending on the maintenance replacement item.</p> <p>T: Toner container 00: Black 01: Cyan 02: Magenta 03: Yellow</p> <p>M: Maintenance kit 01: MK-5141 (30 ppm model only) MK-5291 (40 ppm model only)</p> <p>Example: T00: 1 The toner container (Black) has been replaced once.</p> <p>The toner replacement log is triggered by toner empty. This record may contain such a reference as the toner container is inserted.</p>	<p>Consist of three log counters of paper jams, self diagnostics errors, and maintenance replacement items.</p>

**LLU PRT**

**Description**

Event log, Unit history report and test page are printed.

**Purpose**

Output the data for applying LLU.

**Method**

1. Enter the Service Setting menu.
2. Select [LLU PRT].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].) (35 ppm model)
5. LLU report is printed.

**Completion**

- Press [Menu] key. (30 ppm model)  
By the right selection key, select [Exit]. (35 ppm model)

## Maintenance

### Description

Counter reset for the maintenance kit

The [Install MK] message means that maintenance kit should be replaced at fixed pages of printing. Reset the counter by using this service item after replacing the maintenance kit.

\* :This is displayed on the system menu, only when the maintenance kit becomes at the time to replace.

Maintenance kit MK-5141 (30 ppm model) :200,000 images

Maintenance kit includes the following units

Drum unit

Developer unit(K,Y,M,C)

Primary transfer unit

Secondary transfer roller unit

Fuser unit

Paper feed roller unit

Retard roller

### Purpose

Counter reset for the maintenance kit.

### Replacement procedures

Drum unit

Developer unit(K,Y,M,C)

Primary transfer unit

Secondary transfer roller unit

Fuser unit

Paper feed roller unit

Retard roller unit

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Maintenance].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].) (35 ppm model)
5. [Completed] is displayed. The counter for each component is reset immediately.

### Remarks

Occurrences of resetting the maintenance kits are recorded on the service status page or event log in number of pages or number of images at which the maintenance kit was replaced (See page P.6-3, P.6-13).

This may be used to determine the possibility that the counter was erroneously or unintentionally reset.

<b>DEV-CLN</b>
----------------

**Description**

The laser output of the image data for developer refreshing is carried out, and the operation of exposure, developing and primary transfer is performed, for ten pages equivalent. (paper is not fed).

**Purpose**

Execute when the image density deteriorates or a problem in the developer unit occurs.

**Method**

1. Enter the Service Setting menu.
2. Select [Developer refreshing].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].) (35 ppm model)
5. Developer refreshing will be executed.

**Completion**

- Press [Menu] key. (30 ppm model)  
By the right selection key, select [Exit]. (35 ppm model)

## LSU

### Description

The LSU cleaning motor drives the cleaning pad to wipe the LSU dust shield glass.

### Purpose

To perform when the image failure occurs and stripes are seen in the vertical direction.

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Laser scanner cleaning].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].) (35 ppm model)
5. Laser scanner cleaning will be executed.

### Completion

Press [Menu] key. (30 ppm model)  
By the right selection key, select [Exit]. (35 ppm model)

## Drum

### Description

Rotates the drum approximately two minutes with toner lightly on the overall drum. The cleaning blade in the drum unit scrapes toner off the drum surface to clean it.

### Purpose

To clean the drum surface when image failure occurs due to the drum. This mode is effective when dew condensation on the drum occurs.

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Drum refreshing].
3. Press the [OK] key.
4. Press the [OK] key. (30 ppm model)  
Select [Yes]. (By the left selection key, select [Yes].) (35 ppm model)
5. Drum refreshing will be executed.

### Completion

Press [Menu] key. (30 ppm model)  
By the right selection key, select [Exit]. (35 ppm model)

## Altitude Adjustment

### Description

Perform the altitude Adjustment Setting.

### Purpose

Execute if the print quality is low at the usage environment of 1001 meter or more altitude.

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Altitude Adj.].
3. Press the [OK] key.
4. Using the [^] [V] keys, select [Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m].
5. Press the [OK] key to set the setting.

### Completion

Press [Menu] key. (30 ppm model)

By the right selection key, select [Exit]. (35 ppm model)

## MC

### Description

Sets the main charger output.

### Purpose

Execute if the image density declines, dirt of a background, or an offset has occurred.

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [MC].
3. Press the [OK] key.
4. Using the [^] [V] keys, select the setting "1 to 7".
5. Press the [OK] key to set the setting.

### Completion

Press [Menu] key. (30 ppm model)

By the right selection key, select [Exit]. (35 ppm model)

### (3) Executing the service mode (40 ppm model)

[Message Display]

Ready to print

1. Press the Menu Key.

Menu:  
Report  
Counter  
Paper settings

Print settings  
Network  
Device common

Security  
User/Job Account  
Aplication

**Adjust/Maint.**  
Op Functions

2. Select [Adjustment/Maint.]  
using the cursor up/down keys.  
3. Press the OK key.

4. Select [Service Setting]  
using the cursor up/down keys.  
5. Press the OK key.

Adjust/Maint.:  
Quiet Mode  
ColorCalibration  
Color Regist.  
  
Restart  
**Service Setting**

6. Select the setting item.

Service Setting:  
Service Status  
Network Status  
Op Netwk Status

Test Page  
Maintenance \*

Event Log  
LLU PRT  
DEV-CLN

Drum  
LSU  
Auto DrumRefresh

Drum Heater  
Write Data  
Altitude Adj.

\*:When the replacement time comes  
It is displayed on the system menu

**Service setting**

<b>Items</b>	<b>Description</b>	<b>Page</b>
<b>Service Status Page</b>	Printing a service status page.	P.6-26
<b>Network Status</b>	Printing a network status page.	P.6-26
<b>OP Network Status</b>	Printing an OP Network status page.	P.6-26
<b>Test Page</b>	Output the test page drawn with the halftone.	P.6-27
<b>Maintenance</b>	Counter reset for the maintenance kit.	P.6-28
<b>Event log</b>	Outputs the event log report.	P.6-29
<b>LLU PRT</b>	Outputs the LLU report.	P.6-29
<b>DEV-CLN</b>	Perform developer refreshing.	P.6-30
<b>Drum</b>	Perform drum surface refreshing.	P.6-31
<b>LSU</b>	Clean the LSU dust shield glass.	P.6-31
<b>Auto Drum refreshing</b>	Perform drum surface refreshing operation, during a certain period of time.	P.6-32
<b>Drum heater</b>	Sets the drum heater.	P.6-32
<b>Write Data</b>	Writes the data to a USB memory.	P.6-33
<b>Altitude Adjustment</b>	Perform the altitude Adjustment Setting.	P.6-33



## (4) Descriptions of service modes

### Service Status Page

**Description**

Printing a service status page. The status page includes various settings and service data.

**Purpose**

This is used to retrieve the setting environment information and service data.

**Method**

1. Enter the Service Setting menu.
2. Select [Service Status Page].
3. Press the [OK] key.
4. Select [Yes]. (By the left selection key, select [Yes].)

Service status page will be printed.

\* :Refer to "Detail of service status page" for the detailed contents. (See page P.6-4)

**Completion**

By the right selection key, select [Exit].

### Network Status

**Description**

Printing a network status page.

**Purpose**

To acquire the detailed network setting information.

**Method**

1. Enter the Service Setting menu.
2. Select [NW Status].
3. Press the [OK] key.
4. Select [Yes]. (By the left selection key, select [Yes].)

Network status page will be printed.

**Completion**

By the right selection key, select [Exit].

### OP Network Status \* When Optional NIC is installed

**Description**

Printing an OP Network status page.

**Purpose**

To acquire the detailed OP Network setting information.

**Method**

1. Enter the Service Setting menu.
2. Select [OP NW Status].
3. Press the [OK] key.
4. Select [Yes]. (By the left selection key, select [Yes].)

OP Network status page will be printed.

**Completion**

By the right selection key, select [Exit].

**Test Page**

**Description**

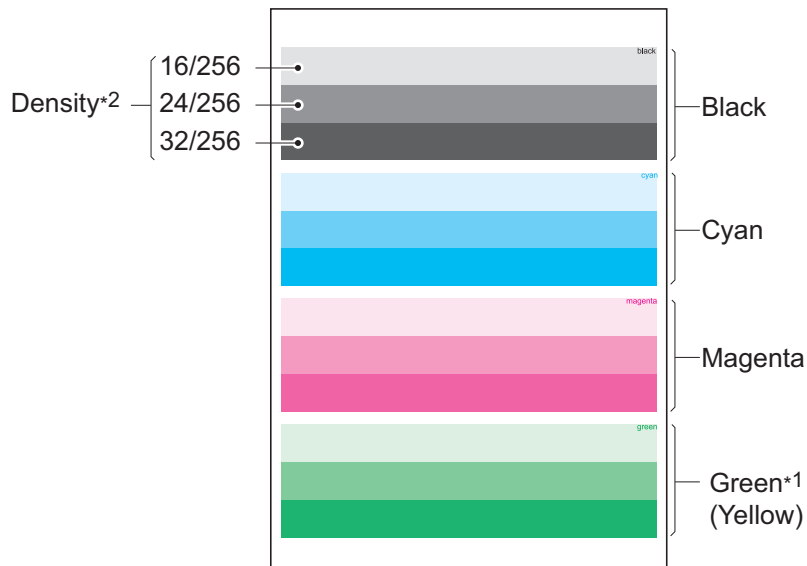
Outputs the test page which is printed in four colors respectively with halftones of three different levels.

**Purpose**

When the image failure occurs, output the test page in order to judge the cause.

**Method**

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Test Page].
3. Press the [OK] key.
4. Select [Yes]. (By the left selection key, select [Yes].)  
Test page is printed.



**Figure 6-12**

\*1: Since focusing in yellow is hardly readable, yellow is mixed with cyan for more readability, resulting in green.

\*2: Four colors are printed respectively with halftones of three different levels (bands). If focus is excessively lost, dots are not recognizable with the 16/256 band, resulting in uneven density. It also results in vertical streaks (white or black) in the 24/256 and/or 32/256 bands.

**Completion**

By the right selection key, select [Exit].

## Maintenance

### Description

Counter reset for the maintenance kit

The [Install MK] message means that maintenance kit should be replaced at fixed pages of printing. Reset the counter by using this service item after replacing the maintenance kit.

\* :This is displayed on the system menu, only when the maintenance kit becomes at the time to replace.

Maintenance kit MK-5161 (40 ppm model) :300,000 images

Maintenance kit includes the following units

Drum unit

Developer unit(K,Y,M,C)

Primary transfer unit

Secondary transfer roller unit

Fuser unit

Paper feed roller unit

Retard roller

### Purpose

Counter reset for the maintenance kit.

### Replacement procedures

Drum unit

Developer unit(K,Y,M,C)

Primary transfer unit

Secondary transfer roller unit

Fuser unit

Paper feed roller unit

Retard roller unit

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Maintenance].
3. Press the [OK] key.
4. By the left selection key, select [Yes].
5. [Completed] is displayed. The counter for each component is reset immediately.

### Remarks

Occurrences of resetting the maintenance kits are recorded on the service status page or event log in number of pages or number of images at which the maintenance kit was replaced (See page P.6-3, P.6-13).

This may be used to determine the possibility that the counter was erroneously or unintentionally reset.

<b>Event log</b>
------------------

**Description**

Prints a history list of occurrences of paper jam, self-diagnostics, toner replacements, etc.

**Purpose**

To allow machine malfunction analysis based on the history list of occurrences.

**Method**

1. Enter the Service Setting menu.
2. Select [Event log].
3. Press the [OK] key.
4. Select [Yes].
5. Event log is printed.

**Completion**

By the right selection key, select [Exit].

<b>LLU PRT</b>
----------------

**Description**

Event log, Unit history report and test page are printed.

**Purpose**

Output the data for applying LLU.

**Method**

1. Enter the Service Setting menu.
2. Select [LLU PRT].
3. Press the [OK] key.
4. Select [Yes]. (By the left selection key, select [Yes].)
5. LLU report is printed.

**Completion**

By the right selection key, select [Exit]. (35 ppm model)

<b>DEV-CLN</b>
----------------

**Description**

The laser output of the image data for developer refreshing is carried out, and the operation of exposure, developing and primary transfer is performed, for ten pages equivalent. (paper is not fed).

**Purpose**

Execute when the image density deteriorates or a problem in the developer unit occurs.

**Method**

1. Enter the Service Setting menu.
2. Select [Developer refreshing].
3. Press the [OK] key.
4. Select [Yes]. (By the left selection key, select [Yes].)
5. Developer refreshing will be executed.

**Completion**

By the right selection key, select [Exit].

## Drum

### Description

Rotates the drum approximately two minutes with toner lightly on the overall drum. The cleaning blade in the drum unit scrapes toner off the drum surface to clean it.

### Purpose

To clean the drum surface when image failure occurs due to the drum. This mode is effective when dew condensation on the drum occurs.

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Drum refreshing].
3. Press the [OK] key.
4. By the left selection key, select [Yes]. Drum refreshing will be executed.

### Completion

By the right selection key, select [Exit].

## LSU

### Description

The LSU cleaning motor drives the cleaning pad to wipe the LSU dust shield glass.

### Purpose

To perform when the image failure occurs and stripes are seen in the vertical direction.

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Laser scanner cleaning].
3. Press the [OK] key.
4. By the left selection key, select [Yes]. Laser scanner cleaning will be executed.

### Completion

By the right selection key, select [Exit].

## Auto Drum refreshing

### Description

Auto drum surface refreshing

The drum surface refreshing operation is normally performed when the power is turned on or during warm-up after recovering from the sleep mode if the drum surface is judged as the condition of condensation by the temperature/humidity sensor. According to this mode setting, change the judgment criteria if it is the condition of condensation.

### Purpose

To clean the drum surface when image failure occurs due to the drum. This mode is effective when dew condensation on the drum occurs.

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Auto Drum refreshing].
3. Press the [OK] key.
4. Using the [^] [V] keys, select the desire mode (Off/Short/Standard/Long).
5. By the left selection key, select [Yes]. Drum refreshing will be executed.

\* :Initial setting: Standard

### Completion

By the right selection key, select [Exit].

## Drum heater

### Description

Sets the drum heater control.

### Purpose

Sets "ON" if the image failure occurs due to humidity factors such as condensation on the drum occurs.

\* :This is displayed on the system menu, only when the drum heater is installed.

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Drum Heater].
3. Press the [OK] key.
4. Using the [^] [V] keys, select [On] or [Off].

\* :Initial setting: Off

### Completion

By the right selection key, select [Exit].

## Write Data

### Description

Writes the data to a USB memory.

Execution is possible only when a USB memory is detected.

### Method

Install the USB memory before attempting to write data.

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Write Data].
3. Press the [OK] key.
4. By the left selection key, select [Yes].
5. [Data waiting] is displayed and the printer waits for data to be written.
6. When the data is sent, [Processing] appears and the data is written to USB memory. When data writing ends, the display returns to [Ready].

### Completion

By the right selection key, select [Exit].

## Altitude Adjustment

### Description

Perform the altitude Adjustment Setting.

### Purpose

Execute if the print quality is low at the usage environment of 1001 meter or more altitude.

### Method

1. Enter the Service Setting menu.
2. Using the [^] [V] keys, select [Altitude Adj.].
3. Press the [OK] key.
4. Using the [^] [V] keys, select [Normal], [1001 - 2000m], [2001 - 3000m] or [3001 - 3500m].
5. Press the [OK] key to set the setting.

### Completion

By the right selection key, select [Exit].



## 7 Troubleshooting

### 7-1 Image formation problems

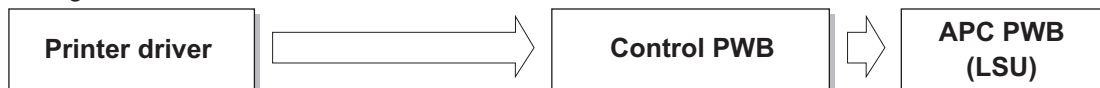
**Isolate the component an image defect has occurred from.**

Main unit as the cause of defect

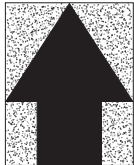
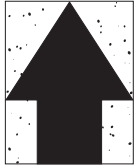

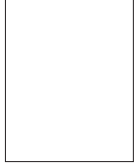

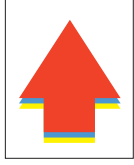
(A defect of image forming occurs from the rendering process that involves charging, drum, LSU, developer, and primary transferring.)

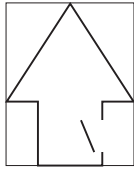



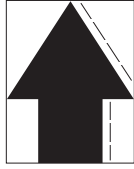
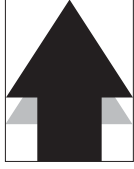

#### Flow of image data

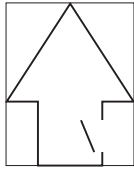
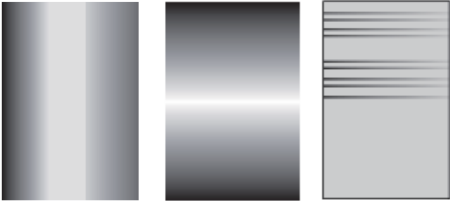


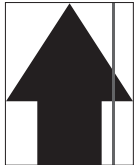
Printing data from PC :



**(1) Engine Factors (Paper conveying cause: Transfer, Fuser and Separation)**

No.	Contents	Image sample
(1-1)	<a href="#">Background is colored</a>	
(1-2)	<a href="#">Black dots or color dots</a>	
(1-3)	<a href="#">The image is not partly printed (blank or white spots)</a>	
(1-4)	<a href="#">Entire blank image (white)</a>	
(1-5)	<a href="#">Color shift in the main scanning direction</a>	
(1-6)	<a href="#">Color shift in the sub scanning direction</a>	

No.	Contents	Image sample
(1-7)	<a href="#">Paper creases</a>	
(1-8)	<a href="#">Dirty reverse side</a>	
(1-9)	<a href="#">The entire image is light</a>	
(1-10)	<a href="#">Horizontal streaks or band (White, black, color)</a>	
(1-11)	<a href="#">Blurred characters (transfer shift)</a>	
(1-12)	<a href="#">Offset image</a>	
(1-13)	<a href="#">Color reproduction is poor</a>	

No.	Contents	Image sample
(1-14)	<a href="#">Fusing failure</a>	
(1-15)	<a href="#">Uneven transfer</a>	
(1-16)	<a href="#">Image is blurred</a>	
(1-17)	<a href="#">Vertical streaks or bands (white)</a>	
(1-18)	<a href="#">Vertical streaks or bands (black, color)</a>	

**Content of Engine Factors (Paper conveying cause: Transfer, Fuser and Separation)**

**(1-1) Background is colored**

<b>Step</b>	<b>Check description</b>	<b>Assumed cause</b>	<b>Measures</b>	<b>Reference</b>
1	Checking the primary transfer unit	The transfer belt surface is dirty.	If the image failure occurs at the outer pitch (long period that spans between papers) of the transfer belt, clean the transfer belt. After cleaning, in case if not resolved even performing the calibration and color adjustment, replace the primary transfer unit.	
2	Correcting the primary transfer bias contact	The primary transfer bias contact is deformed.	Correct the primary transfer bias contact so that it grounds securely.	
3	Correcting the secondary transfer bias contact	The secondary transfer bias contact is deformed.	Correct the secondary transfer bias contact so that it grounds the shaft of the secondary transfer roller securely.	
4	Checking the secondary transfer unit	The secondary transfer roller is dirty.	In the case where image failure occurs at the circumferential pitch of the secondary transfer roller, clean it or replace the secondary transfer unit.	

**(1-2) Black dots or color dots**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the primary transfer unit	There is long cycle dirt and scratches straddling between papers at the outer peripheral pitch of the transfer belt.	If the image failure occurs at the outer pitch (long period that spans between papers) of the transfer belt, clean the transfer belt. If it is not improved, replace the primary transfer unit.	
2	Checking the secondary transfer unit	The secondary transfer roller is dirty or scratched.	In the case where image failure occurs at the circumferential pitch of the secondary transfer roller, clean it or replace the secondary transfer unit.	
3	Checking the fuser unit	The fuser heat roller is dirty or scratched	In the case where image failure occurs at the circumferential pitch of the fuser heat roller, clean it. If not resolved, replace the fuser unit.	

**(1-3) The image is not partly printed (blank or white spots)**

Step	Check description	Assumed cause	Measures	Reference
1	Replacing the paper	The paper is damp.	Replace with the dry paper.	
2	Checking the primary transfer unit	The transfer belt surface is dirty or scratched	If the image failure occurs at the outer pitch (long period that spans between papers) of the transfer belt, clean the transfer belt. After cleaning, in case if not resolved even performing the calibration and color adjustment, replace the primary transfer unit.	
3	Checking the secondary transfer unit	The secondary transfer roller is dirty or scratched.	When the image failures appear in the secondary transfer roller diameter interval, clean the secondary transfer roller. If it is not resolved, replace the secondary transfer unit.	
4	Changing the settings	The media type is not properly set.	Select the proper media type in the system menu.	

**(1-4) Entire blank image (white)**

Step	Check description	Assumed cause	Measures	Reference
1	Opening and closing the rear cover	The rear cover is not closed.	Check the lock of the conveying unit, and open and close the rear cover.	
2	Checking the connection	FFC is not properly connected, or it is faulty.	Clean the following FFC terminal of the FFC and reconnect. If the FFC terminal is deformed or FFC is short circuited, replace FFC. • High voltage PWB - Main/engine PWB	
3	Replacing the high voltage PWB	The secondary transfer bias output from the high voltage PWB is faulty.	Replace the high voltage PWB.	
4	Replacing the main/engine PWB	The ON signal of the secondary transferring and high-voltage (3.3V to 0V) is not output from the main/engine PWB.	Replace the main/engine PWB.	

**(1-5) Color shift in the main scanning direction**

Step	Check description	Assumed cause	Measures	Reference
1	Adjusting the color registration	Color Registration was executed without executing Calibration.	Execute Calibration and then execute Color Registration.	
2	Checking the ID sensor and the ID sensor shutter	The ID sensor is dirty, or the ID sensor shutter opens.	Check the opening / closing operation of the ID sensor shutter and fix it if necessary. And, clean the ID sensor.	
3	Replacing the LSU	The LSU is faulty.	Replace the LSU.	

**(1-6) Color shift in the sub scanning direction**

Step	Check description	Assumed cause	Measures	Reference
1	Adjusting the color registration	Color Registration was executed without executing Calibration.	Execute Calibration and then execute Color Registration.	
2	Checking the ID sensor and the ID sensor shutter	The ID sensor is dirty, or the ID sensor shutter opens.	Check the opening / closing operation of the ID sensor shutter and fix it if necessary. And, clean the ID sensor.	
3	Checking the primary transfer unit	Transfer belt is worn out.	Check if the color registration patches appear twice at the both edge of the transfer belt. If it does not appear twice, replace the primary transfer unit.	
4	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	



### (1-7) Paper creases

Step	Check description	Assumed cause	Measures	Reference
1	Relocating the paper width guides or the MP paper width guides	The locations of the paper width guides or the MP paper width guides do not match the paper size.	Relocate the paper width guides or the MP paper width guides to match the paper size.	
2	Replacing the paper	The paper curls or is wavy.	Replace the paper.	
3	Checking the paper storage place	Paper is stored in the high humidity environment.	Ask users to store paper in a dry place. Put the dry paper into the plastic bag and seal the bag to prevent moisture from getting in.	
4	Checking the pressure spring	The pressure springs are not attached properly at both ends of the registration roller, so the pressure balance is uneven.	Reattach the springs at both ends of the registration roller.	
5	Replacing the fuser unit	The pressure springs at the machine front and rear ends of the fuser unit are not properly attached.	Check the pressure balance of both ends of the fuser unit by checking the nipped pressure on the solid image. If the balance is uneven, replace the fuser unit.	

### (1-8) Dirty reverse side

Step	Check description	Assumed cause	Measures	Reference
1	Checking the secondary transfer unit	The secondary transfer roller is dirty or scratched.	When the image failures appear in the secondary transfer roller diameter interval, clean the secondary transfer roller. If it is not resolved, replace the secondary transfer unit.	
2	Cleaning the fuser press roller	The fuser pressure roller is dirty caused by the paper type setting.	Clean the fuser press roller and set the proper paper weight at the system menu	
3	Cleaning the conveying guide and the developer unit	The conveying guide or developer unit is dirty.	Clean the conveying guide and developer unit.	

**(1-9) The entire image is light**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper	The paper is damp.	Replace the paper.	
2	Opening and closing the rear cover	The paper conveying unit is not closed completely, so the transfer current is not impressed.	Open the rear cover and securely close it.	
3	Checking the secondary transfer unit	The secondary transfer roller does not contact the transfer belt or contact pressure is weak	When the secondary transfer roller shifts, correct the pressure position.	
4	Checking the secondary transfer bias contact	The secondary transfer bias is not impressed since the contact is dirty or deformed	Clean the secondary transfer bias contact. Or, correct its shape so that it is grounded securely.	
5	Replacing the high voltage PWB	The secondary transfer bias output from the high voltage PWB is faulty.	Replace the high voltage PWB.	

**(1-10) Horizontal streaks or band (White, black, color)**

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning the transfer belt	The transfer belt surface is dirty.	If the image failure occurs at the outer pitch (long period that spans between papers) of the transfer belt, clean the transfer belt.	
2	Checking the fuser heat roller	The fuser heat roller is dirty	Clean the fuser heat roller if an image failure appears in the circumference interval	
3	Opening and closing the rear cover	Only the one side of the rear cover is closed, or the pressure spring is deformed.	Close the rear cover.	
4	Checking the secondary transfer unit	The pressure spring is not properly attached or deformed.	Reattach the pressure spring. If it is not fixed, replace the secondary transfer unit.	
5	Replacing the primary transfer unit	The transfer belt surface is faulty.	Replace the primary transfer unit.	
6	Replacing the fuser unit	The fuser heat roller surface is scratched	Replace the fuser unit.	

**(1-11) Blurred characters (transfer shift)**

<b>Step</b>	<b>Check description</b>	<b>Assumed cause</b>	<b>Measures</b>	<b>Reference</b>
1	Replacing the paper	Unspecified papers are used.	Replace with the paper within the specification.	
2	Changing the settings	The media type is not properly set.	Select the proper media type in the system menu.	
3	Applying the grease	The drives from the conveying motors are not smoothly transmitted.	Apply the grease to the gear.	
4	Replacing the conveying guide	The conveying guide is deformed.	Replace the conveying guide.	
5	Replacing the fuser unit	The fuser exit guide is deformed or the fuser pressure is uneven	Replace the fuser unit.	

**(1-12) Offset image**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper	Unspecified papers are used.	Replace with the paper within the specification, or change to the media type setting closest to the specified paper.	
2	Changing the settings	The media type is not properly set.	Change the settings according to the media type (paper weight).	
3	Cleaning the transfer belt	The transfer belt surface is dirty.	If the image failure occurs at the outer pitch (long period that spans between papers) of the transfer belt, clean the transfer belt.	
4	Cleaning the secondary transfer roller	The secondary transfer roller is dirty.	When the image failure appears with the secondary transfer roller pitch, clean the secondary transfer roller.	
5	Cleaning the fuser heat roller	The fuser heat roller is dirty	Clean the fuser heat roller if an image failure appears in the circumference interval	
6	Checking the primary transfer cleaning bias contact	The primary transfer cleaning bias contact smudges or is deformed.	Clean the primary transfer cleaning bias contact. Or, correct its shape so that it is securely grounded.	
7	Replacing the primary transfer unit	Transfer cleaning voltage is not applied due to the broken wire in the primary transfer unit.	Replace the primary transfer unit.	
8	Replacing the high voltage PWB	The high voltage PWB is faulty.	Replace the high voltage PWB.	

### (1-13) Color reproduction is poor

Step	Check description	Assumed cause	Measures	Reference
1	Replacing the paper	The paper is damp.	Replace the paper.	
2	Checking the paper	Rough paper for mono-chrome print is used.	Use the color paper with smooth surface that fits for color print.	
3	Changing the settings	Installation environment is high altitude.	Set the optimal mode at [Menu] > [Adjustment/Maintenance] > [Service Settings] > [High Altitude]	
4	Adjusting the image	The half tone image cannot be reproduced.	Execute [Calibration] in [Menu] key > [Adjustment/Maintenance]. Then, execute	
5	Executing Developer refresh	The developer powder in the developer unit is deteriorated.	Isolate the abnormal color and execute Developer Refresh for that color.	
6	Reinstalling the drum unit and the main charger unit	The drum unit or the main charger roller unit is not properly installed.	Reattach the charger roller unit and the drum unit that has poor reproduction of the color.	
7	Changing the settings	The proper color reproduction mode is not selected in the [Imaging] tab in the print settings at the PC.	Change [Color reproduction] in the [Imaging] tab in the print settings at the PC.	
8	Changing the settings	Printer data is CYMK, but not RGB.	Change [Color conversion processing] of Print quality in KPD to Image Quality prior mode.	

### (1-14) Fusing failure

Step	Check description	Assumed cause	Measures	Reference
1	Replacing the paper	Unspecified papers are used.	Replace with the proper paper.	
2	Changing the settings	The media type is not properly set.	Select the proper media type in the system menu.	
3	Replacing the fuser unit	The nipped pressure (width) to the solid image is low and fuser pressure setting (spring) is too weak.	Replace the fuser unit.	

### (1-15) Uneven transfer

Step	Check description	Assumed cause	Measures	Reference
1	Checking the conveying section	The conveying section is not closed completely.	Open the paper conveying section once, and close it firmly.	
2	Correcting the primary transfer cleaning bias contact	The primary transfer cleaning bias contact smudges or is deformed.	Clean the primary transfer cleaning bias contact. Or, correct its shape so that it is securely grounded.	
3	Cleaning the transfer belt	The transfer belt surface is dirty.	If the image failure occurs at the outer pitch (long period that spans between papers) of the transfer belt, clean the transfer belt.	
4	Cleaning the secondary transfer roller	The secondary transfer roller is dirty.	When the image failure appears with the secondary transfer roller pitch, clean the secondary transfer roller.	
5	Checking the secondary transfer unit	The secondary transfer roller is faulty. Or, the pressure spring is deformed.	Correct the pressure spring deformed. If it is not fixed, replace the secondary transfer unit.	
6	Replacing the primary transfer unit	The transfer belt surface is scratched	Replace the primary transfer unit.	
7	Replacing the primary transfer unit and the high voltage PWB	The primary transfer cleaning bias contact is faulty.	Replace the primary transfer unit or high voltage PWB	
8	Replacing the fuser unit	The roller, or the parts in the drive section or the fuser press-release section are deformed or worn down.	Replace the fuser unit.	

### (1-16) Image is blurred

Step	Check description	Assumed cause	Measures	Reference
1	Replacing the paper	The paper is damp.	Replace with the dry paper.	

**(1-17) Vertical streaks or bands (white)**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the primary transfer unit	The transfer belt surface is dirty or scratched	If the image failure occurs at the outer pitch (long period that spans between papers) of the transfer belt, clean the transfer belt. If it is not improved, replace the primary transfer unit.	
2	Checking the secondary transfer unit	The secondary transfer roller is dirty or scratched.	When the image failures appear in the secondary transfer roller diameter interval, clean the secondary transfer roller. If it is not resolved, replace the secondary transfer unit.	
3	Reattaching the feed-shift guide	The paper is hitting the feed-shift guide strongly.	Reattach the feedshift guide.	

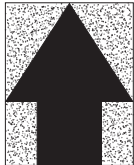
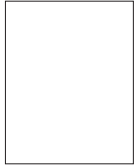
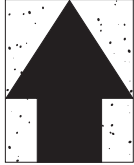



**(1-18) Vertical streaks or bands (black, color)**




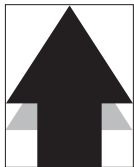
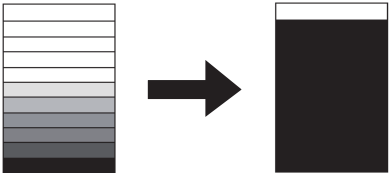

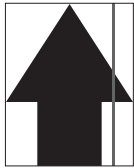
Step	Check description	Assumed cause	Measures	Reference
1	Cleaning the fuser separation claws	The fuser separation nails are dirty with toner	Clean the fuser separation nails	
2	Changing the settings	The media type is not properly set.	Select the proper media type in the system menu.	
3	Cleaning the feed-shift guide	There is toner dirt or welding on the feed-shift guide.	Clean the feed-shift guide.	
4	Cleaning the discharger brush	The separation brush is dirty with paper dust or toner.	Clean the discharger brush by using the cleaning brush, etc.	
5	Checking the primary transfer unit	The transfer belt surface is dirty or scratched	If the image failure occurs at the outer pitch (long period that spans between papers) of the transfer belt, clean the transfer belt. If it is not improved, replace the primary transfer unit.	
6	Checking the secondary transfer unit	The secondary transfer roller is dirty or scratched.	When the image failures appear in the secondary transfer roller diameter interval, clean the secondary transfer roller. If it is not resolved, replace the secondary transfer unit.	

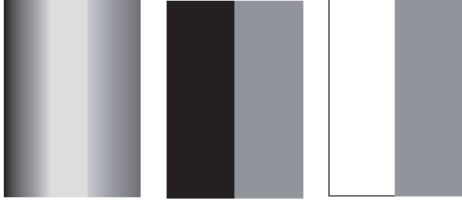
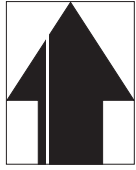
<b>Step</b>	<b>Check description</b>	<b>Assumed cause</b>	<b>Measures</b>	<b>Reference</b>
7	Checking the primary transfer cleaning bias contact	The primary transfer cleaning bias contact smudges or is deformed.	Clean the primary transfer cleaning bias contact. Or, correct its shape so that it is securely grounded.	
8	Replacing the high voltage PWB	The cleaning bias is not generated from the high voltage PWB.	Replace the high voltage PWB.	



**(2) Engine Factors (Image forming cause)**

No.	Contents	Image sample
(2-1)	<a href="#">Background is colored</a>	
(2-2)	<a href="#">Entire blank image (white)</a>	
(2-3)	<a href="#">Black dots</a>	
(2-4)	<a href="#">Entire blank image (black)</a>	
(2-5)	<a href="#">Horizontal streaks or bands (white or black)</a>	
(2-6)	<a href="#">Irregular horizontal streaks and dots (white)</a>	

No.	Contents	Image sample
(2-7)	<a href="#">Horizontal uneven density</a>	
(2-8)	<a href="#">The entire image is light</a>	
(2-9)	<a href="#">Part of the image is not copied</a>	
(2-10)	<a href="#">Offset image</a>	
(2-11)	<a href="#">Poor grayscale reproduction</a>	
(2-12)	<a href="#">Image is blurred</a>	
(2-13)	<a href="#">Vertical streaks and bands (black)</a>	

No.	Contents	Image sample
(2-14)	<a href="#">Vertical uneven density</a>	
(2-15)	<a href="#">Vertical streaks or bands (white)</a>	

## Content of Engine Factors (Image forming cause)

### (2-1) Background is colored

Step	Check description	Assumed cause	Measures	Reference
1	Performing the items to improve the image quality	Uncharged toner is increasing due to the high density continuous printing in the high temperature environment.	Execute [DEV-CLN] in [Menu] key > [Adjustment/Maintenance] > [Service settings]. Next, execute [Calibration] in [Adjustment/Maintenance].	
2	Checking the developer bias contact	The developer bias contact is dirty or deformed.	Clean the developer bias contact, or correct its shape so that it grounds securely.	
3	Checking the temperature inside the main unit	Temperature is low in the installation environment.	When the internal temperature is 16 °C / 60.8 °F or less, request user to relocate the main unit to the environment where the room temperature is warmer than 16 °C / 60.8 °F.	
4	reinstalling the main charger unit and drum unit	The drum unit does not ground.	Reattach the main charger unit to the drum unit and reinstall the drum unit into the main unit to ensure secure contact .	
5	Checking the main charger unit	The main charger roller surface is dirty or scratched	Clean the main charger roller if an image failure appears in the circumference interval. If not repaired, replace the main charger unit.	
6	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• High voltage PWB - Main/engine PWB</li> <li>• Toner motor - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
7	Replacing the high voltage PWB	The high voltage contact for the high-voltage PWB is deformed.	Replace the high voltage PWB.	
8	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
9	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

<b>Step</b>	<b>Check description</b>	<b>Assumed cause</b>	<b>Measures</b>	<b>Reference</b>
10	Checking the toner motor	The toner motor is properly attached, or it is faulty.	Reattach the toner motor. If it is not repaired, replace it.	

**(2-2) Entire blank image (white)**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the developer bias contact	The developer bias contact is dirty or deformed.	Clean the developer bias contact, or correct its shape so that it grounds securely.	
2	Replacing the developer unit	The developer drive gear is faulty.	Replace the developer unit.	
3	Checking the connection	FFC is not properly connected, or it is faulty.	Clean the following FFC terminal of the FFC and reconnect. If the FFC terminal is deformed or FFC is short circuited, replace FFC. • High voltage PWB - Main/engine PWB	
4	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Conveying developer motor - Engine relay PWB • Engine relay PWB - Main/engine PWB • LSU - Main/engine PWB	
5	Checking the conveying developer motor	The conveying developer motor is not properly attached, or it is faulty.	Reattach the conveying developer motor. If it is not repaired, replace it.	
6	Checking the conveying drive unit	The drive parts do not normally rotate, or they are faulty.	Check the drive parts in the conveying drive unit and clean and apply the grease of excessive load is given. If not repaired, replace them.	
7	Checking the primary transfer bias contact	The primary transfer bias contact is dirty or deformed.	Clean the primary transfer bias contact. Or, correct its shape so that it grounds securely.	
8	Replacing the high voltage PWB	The high voltage PWB is faulty.	Replace the high voltage PWB.	
9	Replacing the LSU	The LSU is faulty.	Replace the LSU.	
10	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

**(2-3) Black dots**

Step	Check description	Assumed cause	Measures	Reference
1	Executing Drum refresh	The drum surface is dirty.	Execute Drum refresh.	
2	Replacing the drum unit	There are some scratches on the drum surface.	Replace the drum unit.	
3	Checking the main charger unit	The main charger roller surface is dirty or scratched	Clean the main charger roller if an image failure appears in the circumference interval. If not repaired, replace the main charger unit.	
4	Changing the settings	Developer bias leaks.	Set the proper mode at [Adjustment/Maintenance] > [Service Settings] > [Altitude Adjustment] via the System Menu.	
5	Checking the developer unit	The developer roller is dirty or faulty.	Clean the developer roller if an image failure appears in the circumference interval. If not repaired, replace the developer unit.	

**(2-4) Entire blank image (black)**

Step	Check description	Assumed cause	Measures	Reference
1	reinstalling the main charger unit and drum unit	The drum unit or the main charger unit is not properly installed.	Reattach the main charger unit to the drum unit and reinstall the drum unit into the main unit to ensure secure contact .	
2	Checking the main charger roller contact	The main charger roller contact is dirty or deformed	Clean the main charger roller contact and correct its shape so it is grounded securely.	
3	Checking the developer bias contact	The developer bias contact is dirty or deformed.	Clean the developer bias contact, or correct its shape so that it grounds securely.	
4	Checking the high voltage contact	The high voltage contact of the high voltage PWB is dirty or scratched	Clean the high voltage contact and correct its shape so that it grounds securely. Or, reattach the high-voltage PWB.	
5	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • High voltage PWB - Main/engine PWB • LSU - Main/engine PWB	
6	Replacing the high voltage PWB	The high voltage PWB is faulty.	Replace the high voltage PWB.	
7	Replacing the LSU	The LSU is faulty.	Replace the LSU.	
8	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	



**(2-5) Horizontal streaks or bands (white or black)**

Step	Check description	Assumed cause	Measures	Reference
1	Specifying the faulty color	(Judgment of the abnormal color)	Print out the test page in the service setting menu to isolate the abnormal color. (Go to next step)	
2	Cleaning the developer unit	Both ends of the developer roller are dirty and it causes the developer bias leakage.	Clean both ends of the developer roller and main charger contact.	
3	Executing Developer refresh	The last image remains on the developer roller surface.	Execute the developer refresh.	
4	Replacing the developer unit	Both ends of the developer roller and the developer bias contact are deteriorated and it causes the developer bias leakage.	Replace the developer unit.	
5	Executing Drum refresh	The drum surface is dirty.	Execute Drum refresh.	
6	Replacing the drum unit	There are some scratches on the drum surface.	Replace the drum unit.	
7	Checking the main charger unit	The main charger roller surface is dirty or scratched	Clean the main charger roller if an image failure appears in the circumference interval. If not repaired, replace the main charger unit.	
8	Changing the settings	The electric charge remains on the drum surface due to insufficient discharging.	Lower the main charger output at [Menu] > [Adjustment/Maintenance] > [Service Settings] > [MC]	
9	Checking the primary transfer bias contact	The primary transfer bias contact is dirty or deformed	Clean the primary transfer bias contact. Or, correct its shape so that it grounds securely.	
10	Replacing the primary transfer unit	The primary transfer bias contact is deformed or damaged	Replace the primary transfer unit.	
11	Checking the connection	FFC is not properly connected, or it is faulty.	Clean the following FFC terminal of the FFC and reconnect. If the FFC terminal is deformed or FFC is short circuited, replace FFC. • High voltage PWB - Main/engine PWB	
12	Replacing the high voltage PWB	The bias voltage is generated unevenly from the high voltage PWB since the PWB is faulty.	Replace the high voltage PWB.	

**(2-6) Irregular horizontal streaks and dots (white)**

<b>Step</b>	<b>Check description</b>	<b>Assumed cause</b>	<b>Measures</b>	<b>Reference</b>
1	Changing the settings	The settings do not match the installation environment (High altitude exceeding 1,500m above sea-level).	Set the optimal mode at [Menu] > [Adjustment/Maintenance] > [Service Settings] > [High Altitude]	
2	Correcting the main charger roller contact	The main charger roller contact does not ground.	Correct the main charger roller contact so that it grounds securely.	
3	Reinstalling the drum unit	The drum unit is not properly installed, so it does not ground the drum drive shaft.	Reinstall the drum unit.	
4	Replacing the paper	Paper with the high surface resistance is used.	Replace with the recommended paper.	

**(2-7) Horizontal uneven density**

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling the main charger unit	The main charge roller rotates irregularly.	Reattach the main charger roller unit.	
2	Replacing the main charger unit	The charger cleaning roller is deformed.	Replace the main charger roller unit.	
3	Cleaning the DS pulley	The DS pulleys are dirty.	Clean the DS pulleys at both ends of the developer unit.	
4	Replacing the developer unit	The DS pulleys are faulty.	Replace the developer unit.	
5	Cleaning the developing bias contact	The conduction is not stabilized due to the dirty developer bias contact.	Clean the developer bias contact.	
6	Executing Developer refresh	The developer powder in the developer unit is deteriorated.	Execute the developer refresh.	
7	Replacing the developer unit	The developer powder in the developer unit is deteriorated.	Replace the developer unit.	
8	Executing Drum refresh	Toner smudges in the shape of a streak are on both ends of the drum surface.	Execute Drum refresh.	
9	Changing the settings	The electric charge remains on the drum surface due to insufficient discharging.	Lower the main charger output at [Menu] > [Adjustment/Maintenance] > [Service Settings] > [MC]	
10	Replacing the drum unit	The drum surface is worn down.	Replace the drum unit.	
11	Replacing the LSU	The laser emission is uneven.	Replace the LSU.	

**(2-8) The entire image is light**

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling the toner container	Toner is collected on one side.	Sufficiently shake the toner container and reinstall it to the main unit.	
2	Replacing the toner container	The toner supply opening does not open.	Replace the toner container.	
3	Performing the items to improve the image quality	Toner is deteriorated due to frequent low coverage printing.	Execute [DEV-CLN] in [Menu] key > [Adjustment/Maintenance] > [Service settings]. Next, execute [Calibration] in [Adjustment/Maintenance].	
4	Reinstalling the drum unit and developer unit	The drum unit or the developer unit is not properly attached, so that the developer roller does not contact the drum.	Reinstall the drum unit and the developer unit.	
5	Correcting the developer bias contact	The developer bias contact is deformed.	Correct the developer bias contact so that it grounds securely.	
6	Checking the DS pulley	The DS pulleys are dirty or faulty.	Clean the DS pulleys at both ends of the developer unit. Also, if the DS pulleys are faulty, replace the developer unit.	
7	Checking the developer unit	The toner sensor has a fault and so toner is not supplied.	Execute Developer Refresh when the four-color PG image output as test page is too light.	
8	Executing Drum refresh	The drum surface has condensation.	Execute Drum refresh.	
9	Replacing the drum unit	The drum surface is worn down.	Replace the drum unit.	
10	Cleaning the main charger roller	The voltage applied to the main charger roller contact is too high.	Correct the main charger roller contact so that it grounds securely.	
11	Cleaning the eraser	The eraser is dirty.	Clean the eraser.	
12	Checking the drum unit and the developer unit	The eraser is faulty.	Insert the unit all the way to reconnect the connector. If the issue is not resolved, replace the drum unit.	
13	Correcting the primary transfer bias contact	The primary transfer bias contact is deformed.	Correct the primary transfer bias contact so that it grounds securely.	
14	Replacing the primary transfer unit	The primary transfer roller comes off or transfer belt is deteriorated	Replace the primary transfer unit.	

Step	Check description	Assumed cause	Measures	Reference
15	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• High voltage PWB - Main/engine PWB</li> <li>• Toner motor - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
16	Replacing the high voltage PWB	The high voltage PWB is faulty.	Replace the high voltage PWB.	
17	Replacing the LSU	The LSU is dirty or faulty.	Replace the LSU.	
18	Checking the toner motor	The toner motor is properly attached, or it is faulty.	Reattach the toner motor. If it is not repaired, replace it.	
19	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
20	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

**(2-9) Part of the image is not copied**

Step	Check description	Assumed cause	Measures	Reference
1	Executing Drum refresh	The drum surface is dirty.	Execute Drum refresh.	
2	Replacing the primary transfer unit	The primary transfer roller is dirty or deformed	Replace the primary transfer unit.	

### (2-10) Offset image

Step	Check description	Assumed cause	Measures	Reference
1	Replacing the primary transfer unit	Transfer cleaning voltage is not applied due to the broken wire in the primary transfer unit.	Replace the primary transfer unit.	
2	Executing Drum refresh	The drum surface is dirty.	Execute Drum refresh.	
3	Replacing the drum unit	The drum surface is worn down or scratched.	Replace the drum unit.	
4	Cleaning the developer roller	The developer roller is dirty	Clean the developer roller.	
5	Replacing the developer unit	The developer roller surface is worn down or scratched.	Replace the developer unit.	

### (2-11) Poor grayscale reproduction

Step	Check description	Assumed cause	Measures	Reference
1	Adjusting the image	Calibration is not executed properly	Execute [Calibration] in [Menu] key > [Adjustment/Maintenance].	

### (2-12) Image is blurred

Step	Check description	Assumed cause	Measures	Reference
1	Executing Drum refresh	The drum surface has condensation.	Execute Drum refresh.	
2	Executing the Laser Scanner Cleaning	The LSU glass is dirty.	Execute Laser Scanner Cleaning.	
3	Replacing the LSU	The LSU glass is deteriorated.	Replace the LSU.	

**(2-13) Vertical streaks and bands (black)**

<b>Step</b>	<b>Check description</b>	<b>Assumed cause</b>	<b>Measures</b>	<b>Reference</b>
1	Replacing the primary transfer unit	Transfer cleaning voltage is not applied due to the broken wire in the primary transfer unit.	Replace the primary transfer unit.	
2	Executing Drum refresh	The drum surface is dirty.	Execute Drum refresh.	
3	Replacing the drum unit	The drum surface is worn down.	Replace the drum unit.	
4	Checking the main charger unit	The main charge roller surface is dirty in the shape of a streak. Or, the main charge roller surface is deteriorated in the streak shape.	Clean the main charger roller if an image failure appears in the circumference interval. If not repaired, replace the main charger unit.	
5	Checking the developer unit	Foreign objects are on the developer roller surface.	Clean the developer roller if an image failure appears in the circumference interval. If not repaired, replace the developer unit.	

**(2-14) Vertical uneven density**

Step	Check description	Assumed cause	Measures	Reference
1	Replacing the LSU	LSU emits the laser unevenly. (Inner mirror comes off.)	Replace the LSU.	
2	Reinstalling the primary transfer unit	The transfer belt is not contact with the drum. (The primary transfer roller does not press evenly the transfer belt against the drum).	Reattach the primary transfer unit.	
3	Replacing the primary transfer unit	The transfer belt is not contact with the drum uniformly.	Replace the primary transfer unit.	
4	Executing Drum refresh	The drum surface has condensation.	Execute Drum refresh.	
5	Checking the main charger unit	The main charge roller surface is dirty in the shape of a streak. Or, the main charge roller surface is deteriorated in the streak shape.	Clean the main charger roller if an image failure appears in the circumference interval. If not repaired, replace the main charger unit.	
6	Replacing the drum unit	The drum surface is worn down.	Replace the drum unit.	
7	Checking the developer unit	The toner layer on the developer roller is uneven.	Execute the developer refresh. If not repaired, replace the developer unit.	

**(2-15) Vertical streaks or bands (white)**

Step	Check description	Assumed cause	Measures	Reference
1	Executing the Laser Scanner Cleaning	The LSU glass is dirty.	Execute Laser Scanner Cleaning.	
2	Replacing the developer unit	Foreign objects are in the developer unit.	Print out the test page to isolate the abnormal color and replace the developer unit of the applicable color.	
3	Checking the laser path	There are foreign objects on the laser path of the LSU.	Remove foreign objects on the frame or sealing material between the developer unit and the drum unit.	
4	Executing Drum refresh	The drum surface is dirty.	Execute Drum refresh.	
5	Replacing the drum unit	There are some scratches on the drum surface.	Replace the drum unit.	



<b>Step</b>	<b>Check description</b>	<b>Assumed cause</b>	<b>Measures</b>	<b>Reference</b>
6	Checking the main charger unit	The main charger roller surface is dirty or scratched	Clean the main charger roller if an image failure appears in the circumference interval. If not repaired, replace the main charger unit.	
7	Cleaning the eraser	The eraser is dirty.	Clean the eraser.	

## 7-2 Feeding/Conveying Failures

### (1) Prior standard check items

No.	Contents
(1-1)	Paper jam due to the cover-open detection
(1-2)	Paper jam due to the wave or curl in the fuser section of the damp paper
(1-3)	Paper jam due to the dog-ear, paper skew, paper creases, fusing failure or the paper curl
(1-4)	Paper jam due to the guide factor
(1-5)	Paper jam caused by improperly loaded paper in the cassette
(1-6)	Paper jam due to the inferior paper
(1-7)	Paper jam caused by conveying rollers and pulleys
(1-8)	Paper jam due to the sensor
(1-9)	Paper jam due to the setting / detection failure
(1-10)	Paper jam due to the static electricity
(1-11)	Paper jam caused by the installation environment (Papers inside the cassette are always damp.)

## Content of Feeding/Conveying Failures

### (1-1) Paper jam due to the cover-open detection

Step	Check description	Assumed cause	Measures	Reference
1	Opening and closing the rear cover	The rear cover is not aligned to the other exterior covers	Open the rear cover and securely close it. (Checking the interlock switch's position)	
2	Checking the paper	The paper fanning is not enough or the cutting edge of loaded paper is damaged.	Fan the paper well and load it by reversing the paper direction. Correct or replace paper if a dog-ear is found.	
3	Checking the paper	The paper is wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
4	Checking the paper	Unspecified paper is used or foreign objects are on the paper.	Ask a user to use the specified paper type. Or, remove the paper with foreign objects.	
5	Re-loading paper	The paper is not properly loaded.	When the paper is loaded over the guide in the cassette, reload the paper so the paper edge is not on the corner of the cassette.	

### (1-2) Paper jam due to the wave or curl in the fuser section of the damp paper

Step	Check description	Assumed cause	Measures	Reference
1	Re-loading paper	The paper curls.	Reload paper upside down.	
2	Re-loading paper	The paper fanning is not enough.	Fan the paper well and load it by reversing the paper direction	
3	Replacing the paper	The paper is damp.	Replace with the dry paper.	

**(1-3) Paper jam due to the dog-ear, paper skew, paper creases, fusing failure or the paper curl**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path and the paper	The paper is caught with a piece of paper, etc. Or the leading edge of the sheet is bent.	When the dog-ear occurs, check if a piece of torn paper, foreign objects or the burrs on the part do not exist on the paper path, and remove them.	

**(1-4) Paper jam due to the guide factor**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	Checking the guide and separation needle	The guide and separation needle are dirty.	If the guide or separation needle is dirty with toner or paper dust, clean it with a cleaning cloth or brush.	
3	Checking the guide	The guide is not properly attached, or it is faulty.	Check the guide and remove the burrs, etc. if there are any. And, if the guide does not smoothly move manually, reattach it. If not repaired, deformed or worn down, replace it.	
4	Checking the solenoid	The guide is not properly attached. The solenoid does not operate normally.	Check if the guide moves by turning the solenoid on. If the guide does not move at all or smoothly, reattach it. If not repaired, replace the solenoid.	

### (1-5) Paper jam caused by improperly loaded paper in the cassette

Step	Check description	Assumed cause	Measures	Reference
1	Relocating the paper width guides or the MP paper width guides	The locations of the paper width guides or the MP paper width guides do not match the paper size.	When the skew feed, crease or paper jam occurs, reset the paper width guide or MP paper width guide matching to the paper size.	
2	Checking the paper	The paper fanning is not enough.	Fan paper and reload it in the paper source. If a part of the paper is bent, remove it.	

### (1-6) Paper jam due to the inferior paper

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	

### (1-7) Paper jam caused by conveying rollers and pulleys

Step	Check description	Assumed cause	Measures	Reference
1	Checking the conveying rollers and pulleys	The conveying rollers and pulleys are dirty	Check if the conveying rollers or the pulleys have no paper dust, toner, foreign objects, diameter change or frictional wear and clean their surface. If they have a diameter change or frictional wear, replace the parts.	
2	Cleaning the bushing	The bushing is dirty.	If the load is given to the rotation of the conveying roller as the roller shaft and the bearing are dirty, clean the bearing and the roller shaft.	
3	Reattaching the spring	The spring comes off.	Check if the spring came off, or if it adequately presses the roller or the pulley, and reattach it if necessary.	

### (1-8) Paper jam due to the sensor

Step	Check description	Assumed cause	Measures	Reference
1	Reattaching the actuator and spring	The sensor does not detect normally	Reattach the actuator or the spring if the actuator of the sensor is caught up or comes off.	
2	Cleaning the sensor	The sensor is dirty.	When the sensor surface or photoreceptor black felt is dirty by paper dust, etc., clean them.	

### (1-9) Paper jam due to the setting / detection failure

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper leading edge margin	The leading edge margin is not enough.	When there is no margin from the paper leading edge to 4.0+1.5/-1.0mm, and, when there is no check line (fuser jam) on 20mm+/-1mm from the paper leading edge of the test pattern that is output in U034, adjust the leading margin in U402.	
2	Relocating the paper width guides or the MP paper width guides	The paper size is misdetected.	Relocate the paper width guides or the MP paper width guides along the paper size to properly detect the paper size.	
3	Changing the settings	The media type is not properly set.	If the media type setting does not matched the actual paper weight (the paper jam occurs due to the paper separation failure), set the media type at [Menu] key >[Paper Settings] > [Media Type].	

**(1-10) Paper jam due to the static electricity**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the ground	The static electricity accumulates.	When the main unit is installed in the low humidity environment where the static electricity easily accumulates on the conveying guide during the continuous printing, check if the discharge sheet in the exit section and the metal guide in the transfer section are grounded securely. If necessary, reattach the parts.	

**(1-11) Paper jam caused by the installation environment (Papers inside the cassette are always damp.)**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper storage place	Papers have been stored in the improper place.	Ask users to store paper in a dry place.	

## (2) Paper misfeed detection

### (2-1) Paper misfeed indication

When a paper misfeed occurs, the machine immediately stops printing and displays the paper misfeed message on the operation panel. To remove paper misfed in the machine, pull out the cassette, open the paper conveying unit or paper conveying cover.

The locations are displayed on the operation panel when a paper jam has occurred.

#### Misfeed location indicators

##### 30 ppm models

The locations are displayed on the operation panel when a paper jam has occurred.

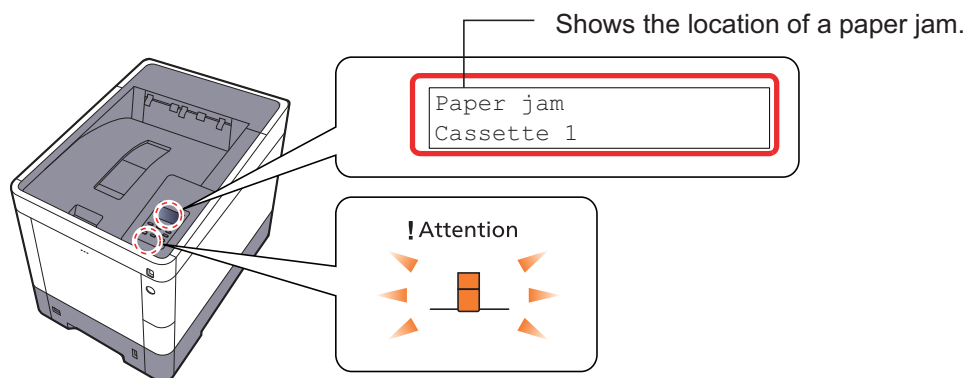


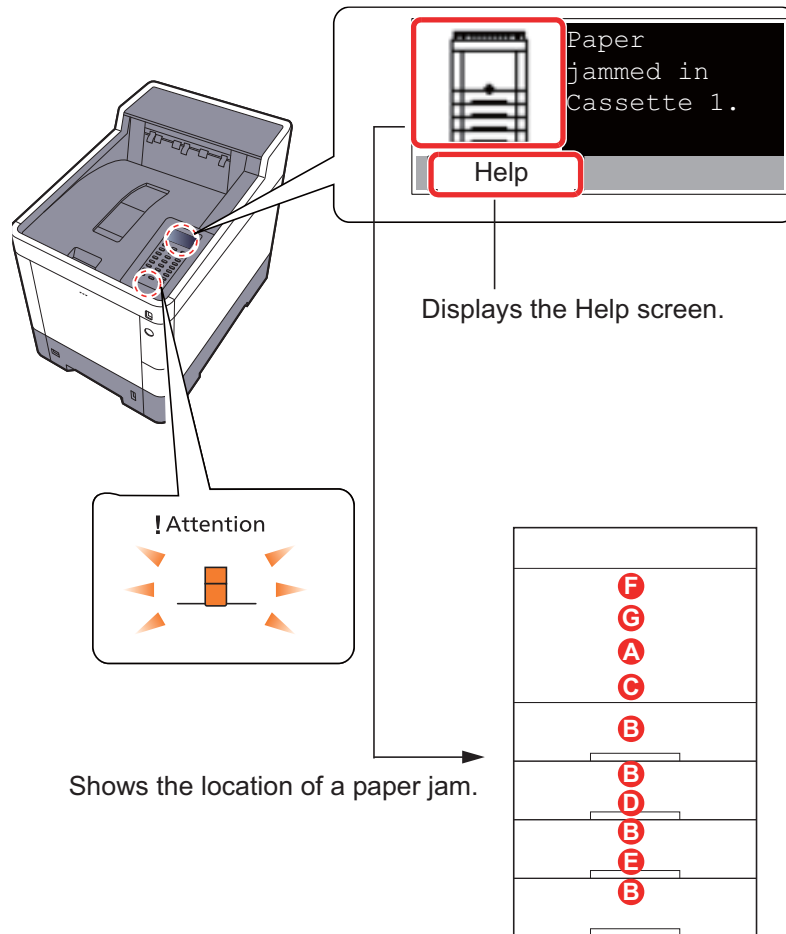
Figure 7-13

Misfeed location indicators	Paper jam:
Paper jam MP Tray	Misfeed in MP tray
Paper jam Cassette 1 (~4)	Misfeed in the cassette 1 to 4
Paper jam Rear Cover	Misfeed inside the rear cover 1 (conveying)
Paper jam Rear Cover 2	Misfeed inside the rear cover 2
Paper jam Rear Cover 3	Misfeed inside the rear cover 3
Paper jam Rear Cover	Misfeed inside the rear cover 1
Paper jam Duplex unit	Misfeed in the duplex unit



**35/40 ppm models**

The locations are displayed on the operation panel when a paper jam has occurred.



**Figure 7-14**

- A. Misfeed in MP tray
- B. Misfeed in the cassette 1 to 4
- C. Misfeed inside the rear cover 1 (conveying)

- D. Misfeed inside the rear cover 2
- E. Misfeed inside the rear cover 3
- F. Misfeed inside the rear cover 1
- G. Misfeed in the duplex unit

### (3) Paper misfeed detection condition

#### Machine + PF (Option)

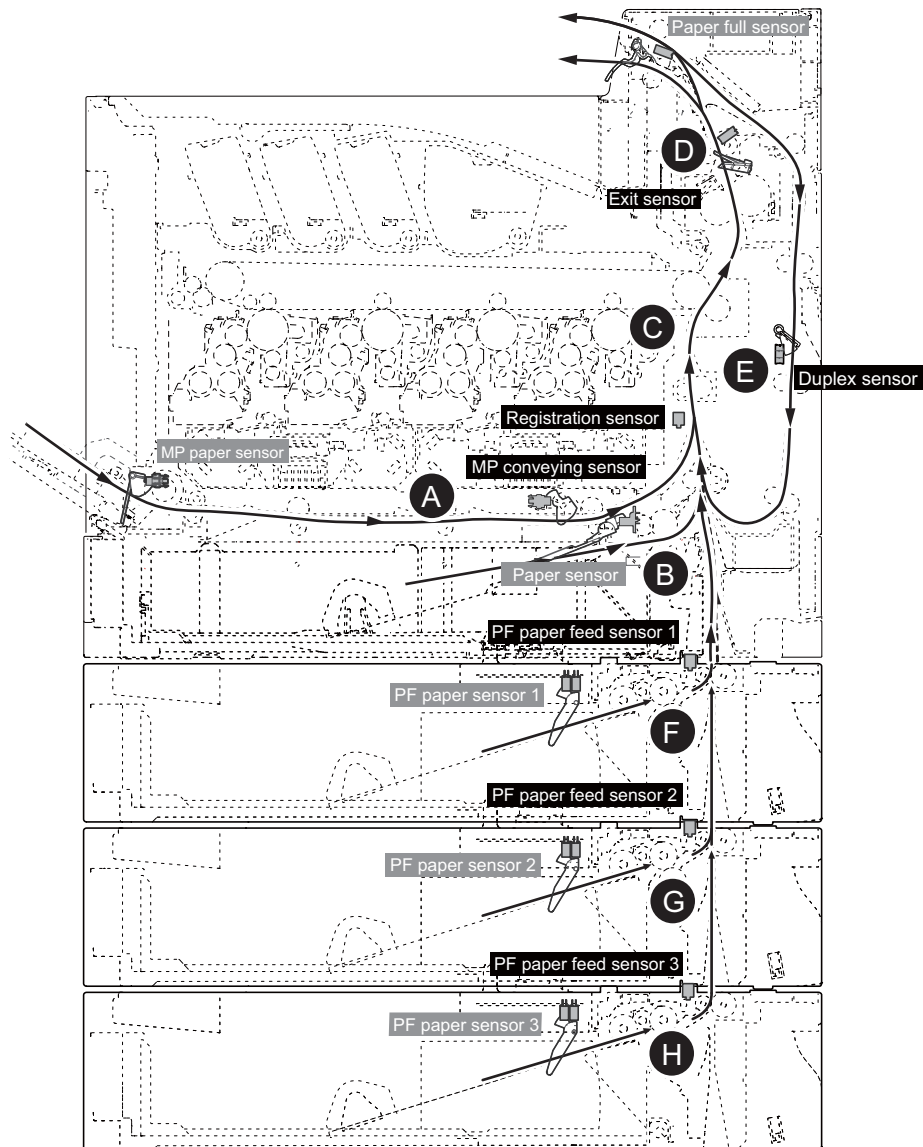


Figure 7-15

\*Duplex sensor: 35/40 ppm models only

List of JAM Code

Code	JAM Position	Code	JAM Position	Code	JAM Position	Code	JAM Position	Code	JAM Position
J0000	-	J0502	F	J1413	F	J4202	D	J4303	E
J0100	-	J0503	G	J1414	F	J4203	D	J4304	E
J0101	-	J0504	H	J1604	G	J4204	D	J4305	E
J0104	-	J0508	E	J1614	G	J4208	D	J4309	E
J0105	-	J0509	A	J4002	C	J4209	D	J4311	E
J0106	-	J0511	C	J4003	C	J4211	D	J4312	E
J0107	-	J0512	C	J4004	C	J4212	D	J4313	E
J0110	-	J0513	C	J4009	C	J4213	D	J4314	E
J0111	-	J0514	C	J4012	C	J4214	D	J4315	E
J0211	-	J0518	C	J4013	C	J4218	C	J4319	E
J0212	-	J0519	A	J4014	C	J4219	C		
J0213	-	J1403	F	J4019	C	J4301	E		
J0501	B	J1404	F	J4201	D	J4302	E		

#### (4) Jam Codes

Error code	Contents	note
J0000	Power ON jam	
J0100/J0101/J0104/ J0105/J0106	Paper jam caused by the firmware factor	
J0107	Fuser temperature stabiliza- tion time-out	
J0110/J0111	Cover open detection	J0110: Rear cover 1 open (Interlock switch) J0111: Inner tray open (Tray switch)
J0211/J0212/J0213	PF rear cover open detection	Target: paper feeder (1 to 3) J0211: Rear cover 2 open J0212: Rear cover 3 open J0213: Rear cover 4 open (PF rear cover switch)
J0501/J0502/J0503/ J0504	No paper feed from cassette 1 - 4	Remark: prior check point when no cassette feed occurs
J0501	Cassette no feed	Condition: No marks of paper feed at the paper leading edge and the lift plate does not ascend
J0501	Cassette no feed	Condition: No marks of paper feed at the paper leading edge and the lift plate ascends but paper feed drive does not start
J0501	Cassette no feed	Condition: The paper stops at the paper feed roller.
J0501	Cassette no feed	Condition: The leading edge comes out from the cassette
J0502/J0503/J0504	No feed from cassette	Target: paper feeder (1 to 3) Condition: There is no paper feeding mark on the leading edge of paper and the lift plate does not goes up.
J0502/J0503/J0504	No feed from cassette	Target: paper feeder (1 to 3) Condition: There is no paper feeding mark on the leading edge of paper and the lift plate goes up but the feed drive does not start.
J0502/J0503/J0504	No feed from cassette	Target: paper feeder (1 to 3) Condition: Paper is stopped at feed roller.
J0502/J0503/J0504	No feed from cassette	Target: paper feeder (1 to 3) Condition: The leading edge of paper is come out of cassette.
J0508	No paper feed from the duplex section	
J0509	No paper feed from the MP tray	
J0511	Multi feed jam	
J0512/J0513/J0514	Multi feed from cassette	Target: paper feeder (1 to 3)

Error code	Contents	note
J0518	Multi-feeding from the duplex section	
J0519	Multi-feeding from the MP tray	
J1403/J1404	PF paper feed sensor 2 non-arrival jam	Target: paper feeder (2, 3)
J1413/J1414	PF paper feed sensor 2 stay jam	Target: paper feeder (2, 3)
J1604	PF paper feed sensor 3 non-arrival jam	Target: Paper feeder (3rd)
J1614	PF paper feed sensor 3 stay jam	Target: Paper feeder (3rd)
J4002/J4003/J4004	Registration sensor non-arrival jam	Target: paper feeder (1 to 3)
J4009	Registration sensor non-arrival jam	
J4012/J4013/J4014	Registration sensor stay jam	Target: paper feeder (1 to 3)
J4019	Registration sensor stay jam	
J4201/J4202/J4203/ J4204/J4208/J4209	Exit sensor non-arrival jam	
J4211/J4212/J4213/ J4214/J4218/J4219	Conveying sensor stay jam	
J4301/J4302/J4303/ J4304/J4305/J4309	DU sensor non arrival jam	Target: 40ppm model
J4311/J4312/J4313/ J4314/J4315/J4319	DU sensor stay jam	Target: 40ppm model

## Content of Jam Code

### J0000: Power ON jam

The power was turned on while the unspecified conveying sensor turns on.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	Cleaning the sensor	The sensor is dirty.	Clean the conveying related sensor.	
3	Checking the connection	The sensor connector is not connected properly	Reinsert the connector of the conveying related sensor.	
4	Replacing the sensor	The sensor is faulty.	Replace the conveying related sensor.	

### J0100/J0101/J0104/J0105/J0106: Paper jam caused by the firmware factor

The firmware does not properly activate.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The controller does not activate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Firmware upgrade	The firmware does not properly activate.	Upgrade the firmware to the latest version.	

### J0107: Fuser temperature stabilization time-out

The fuser temperature does not achieve to the paper feed-able temperature within the specified time.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The controller does not activate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the installation environment	The electric power supply fluctuates or the electric voltage reduces.	Plug the power cord into another wall outlet.	
3	Changing the settings	The actual paper and the paper settings (media type, paper size) do not match.	Select the proper media type in the system menu.	
4	Firmware upgrade	The firmware does not properly activate.	Upgrade the firmware to the latest version.	
5	Replacing the fuser unit	The fuser heater is faulty.	Replace the fuser unit.	

### J0110/J0111: Cover open detection

#### J0110: Rear cover 1 open (Interlock switch)

#### J0111: Inner tray open (Tray switch)

The cover-open is detected during print.

Step	Check description	Assumed cause	Measures	Reference
1	Opening/closing the cover	The covers are not fitted.	Check if the cover is securely closed, and then repair or replace it when the cover is deformed.	

Step	Check description	Assumed cause	Measures	Reference
2	Checking the cover-open detection switch	The connector of the cover-open detection switch does not connect properly. Or, the cover-open detection switch is disconnected.	Re-insert the connector of the cover open detection switch. If the cover-open detection switch is disconnected, reattach it.	
3	Replacing the cover-open detection switch	The cover-open detection switch is faulty.	Replace the cover-open detection switch.	

### J0211/J0212/J0213: PF rear cover open detection

Target: paper feeder (1 to 3)

J0211: Rear cover 2 open

J0212: Rear cover 3 open

J0213: Rear cover 4 open

(PF rear cover switch)

The cover-open is detected during print.

Step	Check description	Assumed cause	Measures	Reference
1	Opening/closing the cover	The covers are not fitted.	Check if the cover is securely closed, and then repair or replace it when the cover is deformed.	
2	Checking the PF rear cover switch	The connector of the PF rear cover switch does not connect properly. Or, the PF rear cover switch is come off.	Re-insert the connector of the PF rear cover switch. If the PF rear cover switch is disconnected, reattach it.	
3	Replacing the PF rear cover switch	The PF rear cover switch is faulty.	Replace the PF rear cover switch.	

### J0501/J0502/J0503/J0504: No paper feed from cassette 1 - 4

Remark: prior check point when no cassette feed occurs

The next sensor does not turn on after the feed clutch turns on when feeding from cassette 1- 4.

Step	Check description	Assumed cause	Measures	Reference
1	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
2	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	

Step	Check description	Assumed cause	Measures	Reference
3	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
4	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
5	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	

### J0501: Cassette no feed

#### Condition: No marks of paper feed at the paper leading edge and the lift plate does not ascend

During paper feed from cassette 1, the leading edge does not come out from the cassette (no mark of paper feed at the leading edge).

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Lift motor - Engine relay PWB • Engine relay PWB - Main/ engine PWB	
2	Checking the driving parts	The lift motor drive is not transmitted to the lift plate drive parts because of the engagement failure.	If there are any problems such as breakage or biting of foreign objects in the joints of the gears, couplings etc. of the motor, clean or replace them.	
3	Checking the lift motor	The lift motor is not properly attached, or it is faulty.	Reattach the lift motor. If it is not repaired, replace it.	
4	Replacing the lift plate	The lift plate is damaged or deformed.	Replace the lift plate.	
5	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
6	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	



Step	Check description	Assumed cause	Measures	Reference
7	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J0501: Cassette no feed

#### Condition: No marks of paper feed at the paper leading edge and the lift plate ascends but paper feed drive does not start

During paper feed from cassette 1, the leading edge does not come out from the cassette (no mark of paper feed at the leading edge).

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Feed clutch - Engine relay PWB • Conveying developer motor - Engine relay PWB • Engine relay PWB - Main/engine PWB	
2	Checking the paper feed shaft and the pin	Feed roller does not rotate as feed shaft and feed pin of the feed roller is not attach properly.	Reattach the feed shaft and feed pin. If there is deformation, etc., replace them.	
3	Checking the paper feed clutch	The paper feed clutch is not connected, so the paper feed roller does not rotate.	Reattach the feed clutch. If it is not repaired, replace it.	
4	Removing the foreign objects and checking the operation of the actuator	The lift sensor is on but the lift plate does not go up to the upper limit position.	Remove the piece of paper or the foreign objects. And, check the actuator of the lift sensor turns on by rising the lift plate. Reattach the actuator if necessary.	
5	Checking the drive gear	The drive from the conveying developer motor is not transmitted.	Replace the faulty drive parts in the conveying drive unit such as a gear.	
6	Checking the conveying developer motor	The conveying developer motor is not driven and feed roller does not rotate	Reattach the conveying developer motor. If it is not repaired, replace it.	
7	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	

Step	Check description	Assumed cause	Measures	Reference
8	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
9	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J0501: Cassette no feed

#### Condition: The paper stops at the paper feed roller.

The registration sensor does not turn on after the feed clutch turns on when feeding from cassette 1.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Feed clutch - Engine relay PWB • Engine relay PWB - Main/engine PWB	
4	Checking the paper feed clutch	The paper feed clutch is not connected, so the paper feed roller does not rotate.	Reattach the feed clutch and reinsert the connector. If it is not repaired, replace it.	
5	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
6	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
7	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## J0501: Cassette no feed

### Condition: The leading edge comes out from the cassette

The registration sensor does not turn on after the feed clutch turns on when feeding from cassette 1.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
2	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	
3	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
4	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
5	(When the paper skew occurs) Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
6	(For marks of paper warpage) checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Registration sensor - Main/engine PWB	
7	(When there is a paper loop mark) Checking the registration sensor	The registration sensor is not properly attached, or it is faulty.	Reattach the regist sensor. If it is not repaired, replace it.	
8	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Middle clutch - Engine relay PWB • Engine relay PWB - Main/engine PWB	
9	Checking the middle clutch	The middle roller does not rotate due to no engagement of the middle clutch.	Reattach the middle clutch. If it is not repaired, replace it.	

Step	Check description	Assumed cause	Measures	Reference
10	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
11	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
12	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J0502/J0503/J0504: No feed from cassette

#### Target: paper feeder (1 to 3)

**Condition: There is no paper feeding mark on the leading edge of paper and the lift plate does not goes up.**

The leading edge of paper does not come out when feeding from cassette 2 to 4. (there is no feeding mark on the leading edge of paper)

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Reconnect the connector following wire. If there is no continuity, replace the wire. • PF lift motor - PF PWB	
2	Checking the driving parts	Because of the connection failure, the drive is not transmitted from the PF lift motor to the lift plate drive parts.	If there are any problems such as breakage or biting of foreign objects in the joints of the gears, couplings etc. of the motor, clean or replace them.	
3	Checking the PF lift motor	PF lift motor is not attached properly or faulty.	Reattach the PF lift motor. If it is not repaired, replace it.	
4	Replacing the lift plate	The lift plate is damaged or deformed.	Replace the lift plate.	
5	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

### J0502/J0503/J0504: No feed from cassette

**Target: paper feeder (1 to 3)**

**Condition: There is no paper feeding mark on the leading edge of paper and the lift plate goes up but the feed drive does not start.**

The leading edge of paper does not come out when feeding from cassette 2 to 4. (there is no feeding mark on the leading edge of paper)

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Reconnect the connector following wire. If there is no continuity, replace the wire. • PF feed clutch - PF PWB • PF feed motor - PF PWB	
2	Checking the paper feed shaft and the pin	Feed roller does not rotate as feed shaft and feed pin of the feed roller is not attach properly.	Reattach the feed shaft and feed pin. If there is deformation, etc., replace them.	
3	Checking the PF feed clutch	Since the PF feed clutch is not connected, the feed roller does not rotate.	Reattach the PF feed clutch. If it is not repaired, replace it.	
4	Removing the foreign objects and checking the operation of the actuator	The PF lift sensor is on but the lift plate does not go up to the upper limit position.	Remove the piece of paper or the foreign objects. And, check the actuator of the PF lift sensor turns on by rising the lift plate. If not, reattach the actuator.	
5	Checking the drive gear	The PF feed motor drive is not transmitted.	Replace the faulty drive parts in the PF drive unit such as a gear.	
6	Checking the PF feed motor	The PF feed motor does not drive and feed roller does not rotate	Reattach the PF feed motor. If it is not repaired, replace it.	
7	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

### J0502/J0503/J0504: No feed from cassette

**Target: paper feeder (1 to 3)**

**Condition: Paper is stopped at feed roller.**

The next sensor does not turn on after the PF feed clutch turns on when feeding from cassette 2- 4.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	

Step	Check description	Assumed cause	Measures	Reference
2	Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
3	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF feed clutch - PF PWB	
4	Checking the PF feed clutch	Since the PF feed clutch is not connected, the feed roller does not rotate.	Reattach the PF feed clutch. If it is not repaired, replace it.	
5	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

### J0502/J0503/J0504: No feed from cassette

**Target: paper feeder (1 to 3)**

**Condition: The leading edge of paper is come out of cassette.**

The PF feed sensor does not turn on after the PF feed clutch turns on when feeding from cassette 2- 4.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
2	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	
3	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
4	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
5	(When the paper skew occurs) Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	

Step	Check description	Assumed cause	Measures	Reference
6	(For marks of paper warpage) checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF feed sensor - PF PWB	
7	(For marks of paper warpage) checking the PF feed sensor	The PF feed sensor is not properly attached, or it is faulty.	Reattach the PF feed sensor. If it is not repaired, replace it.	
8	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF conveying clutch - PF PWB	
9	Checking the PF conveying clutch	The PF conveying clutch is not connected and PF feed roller does not rotate	Reattach the PF conveying clutch. If it is not repaired, replace it.	
10	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

### J0508: No paper feed from the duplex section

(35/40 ppm models) The registration sensor does not turn on after the middle clutch turns on.

(30 ppm models) The registration sensor does not turn on after the duplex exit motor reversal turns on.

Step	Check description	Assumed cause	Measures	Reference
1	Performing the prior standard check items	There is a mechanical cause such as the dirty guide, etc.	Perform the prior standard check items.	
2	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
3	Replacing the paper	The paper curls or is wavy.	Replace with the dry paper.	
4	Checking the DU conveying roller	Conveying capability of the DU conveying roller is not enough.	Clean the surface of the DU conveying roller L and S. If worn down, replace it.	
5	Replacing the actuator and spring	The actuator does not operate properly.	If the actuator or the spring of the registration sensor is deformed or not operating correctly, replace them.	

Step	Check description	Assumed cause	Measures	Reference
6	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Registration sensor - Main/engine PWB</li> <li>• Conveying developer motor - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
7	Checking the registration sensor	The registration sensor is not properly attached, or it is faulty.	Reattach the regist sensor. If it is not repaired, replace it.	
8	Reattaching the conveying unit	The conveying developer motor drive is not transmitted to the duplex roller	Reattach the paper conveying unit.	
9	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
10	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
11	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J0509: No paper feed from the MP tray

The MP conveying sensor does not turn on after the MP solenoid turns on when feeding from the MP tray.

Step	Check description	Assumed cause	Measures	Reference
1	(For the MP lift plate not ascending) checking the cam	The cam does not operate properly	Align the MP lift plate elevation cam and reattach it.	
2	(For the MP lift plate not ascending) checking the MP lift plate	The MP lift plate is not attached properly.	Reattach the MP lift plate.	
3	(For the MP lift plate not ascending) checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• MP solenoid - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	



Step	Check description	Assumed cause	Measures	Reference
4	(For the MP lift plate not ascending) checking the MP solenoid	The MP solenoid does not operate properly.	Reattach the MP solenoid. If it is not repaired, replace it.	
5	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
6	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
7	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
8	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
9	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
10	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
11	Checking the MP paper feed roller	The paper conveying performance of the MP feed roller is not enough.	Clean the MP paper feed roller surface. If worn down, replace it.	
12	Checking the MP conveying roller	The paper conveying performance of the MP conveying roller is not enough.	Clean the surface of the MP conveying roller. If worn down, replace it.	
13	Replacing the actuator and spring	The actuator does not operate properly.	If the actuator or the spring of the MP conveying sensor is deformed or, does not operate correctly, replace them.	
14	Reattaching the MP conveying unit	The conveying developer motor drive is not transmitted to the MP conveying roller	Reattach the MP conveying unit	

Step	Check description	Assumed cause	Measures	Reference
15	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • MP conveying sensor - Engine relay PWB • MP conveying clutch - Engine relay PWB • Engine relay PWB - Main/ engine PWB	
16	Checking the MP conveying sensor	The MP conveying sensor is not properly attached, or it is faulty.	Reattach the MP conveying sensor. If it is not repaired, replace it.	
17	Checking the MP conveying clutch	The MP conveying clutch is not properly attached, or it is faulty.	Reattach the MP conveying clutch. If it is not repaired, replace it.	
18	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
19	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
20	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J0511: Multi feed jam

When feeding from cassette 1, registration sensor is kept ON and does not turn off.

Step	Check description	Assumed cause	Measures	Reference
1	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
2	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
3	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
4	Checking the retard roller	The paper separation force of the retard roller is not enough.	Clean the retard roller surface. If worn down, replace it.	
5	Checking the retard cover	The retard cover comes off.	Reattach the retard cover.	
6	Checking the retard pressure spring	The retard pressure spring comes off.	Reattach the retard pressure spring.	

Step	Check description	Assumed cause	Measures	Reference
7	Replacing the actuator and spring	The actuator does not operate properly.	If the actuator or the spring of the registration sensor is deformed or not operating correctly, replace them.	
8	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Registration sensor - Main/engine PWB	
9	Checking the registration sensor	The registration sensor is not properly attached, or it is faulty.	Reattach the regist sensor. If it is not repaired, replace it.	
10	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Registration clutch - Main/engine PWB • Feed clutch - Engine relay PWB • Engine relay PWB - Main/engine PWB	
11	(In case of no mark of paper loop) Checking the registration clutch	The registration clutch continues linkage and the registration roller rotation does not stop.	Reattach the registration clutch. If it is not repaired, replace it.	
12	Checking the paper feed clutch	The rotation of the feed roller does not stop while the feed clutch remains engaged.	Reattach the feed clutch. If it is not repaired, replace it.	
13	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
14	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
15	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## J0512/J0513/J0514: Multi feed from cassette

### Target: paper feeder (1 to 3)

The PF paper feed sensor does not turn off during paper feed from cassette 2-4.

Step	Check description	Assumed cause	Measures	Reference
1	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
2	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
3	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
4	Checking the retard roller	The paper separation force of the retard roller is not enough.	Clean the retard roller surface. If worn down, replace it.	
5	Checking the retard cover	The retard cover comes off.	Reattach the retard cover.	
6	Checking the retard pressure spring	The retard pressure spring comes off.	Reattach the retard pressure spring.	
7	Replacing the actuator and spring	The actuator does not operate properly.	If the actuator or the spring of the PF feed sensor is deformed or, does not operate correctly, replace them.	
8	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• PF feed sensor - PF PWB</li> <li>• PF conveying clutch - PF PWB</li> <li>• PF feed clutch - PF PWB</li> </ul>	
9	Checking the PF paper feed sensor	The PF feed sensor is not properly attached, or it is faulty.	Reattach the PF feed sensor. If it is not repaired, replace it.	
10	(In case of no mark of paper loop) Checking the PF conveying clutch	The PF conveying clutch continues linkage and the PF conveying roller rotation does not stop.	Reattach the PF conveying clutch. If it is not repaired, replace it.	
11	Checking the PF feed clutch	The PF feed clutch is connected and feed roller rotation does not stop	Reattach the PF feed clutch. If it is not repaired, replace it.	
12	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

## J0518: Multi-feeding from the duplex section

The registration sensor does not turn off during paper feed from the duplex section.

Step	Check description	Assumed cause	Measures	Reference
1	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
2	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
3	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
4	Checking the paper	The paper is wavy or curls due to the moisture.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
5	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Registration clutch - Main/engine PWB</li> <li>• Registration sensor - Main/engine PWB</li> <li>• Middle clutch - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
6	(In case paper reached the registration roller but no mark of paper loop) Checking the registration clutch	The registration clutch continues linkage and the registration roller rotation does not stop.	Reattach the registration clutch. If it is not repaired, replace it.	
7	Checking the registration sensor	The registration sensor is not properly attached, or it is faulty.	Reattach the regist sensor. If it is not repaired, replace it.	
8	Checking the middle clutch	The middle clutch is not properly attached, or it is faulty.	Reattach the middle clutch. If it is not repaired, replace it.	
9	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
10	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	

Step	Check description	Assumed cause	Measures	Reference
11	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J0519: Multi-feeding from the MP tray

The MP conveying sensor does not turn off during paper feed from the MP tray.

Step	Check description	Assumed cause	Measures	Reference
1	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
2	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
3	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
4	Checking the paper	The paper curls or is wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
5	Checking the MP feed roller and the MP separation pad	The paper separation force of the MP separation pad is insufficient.	Clean the MP feed roller and MP separation pad, or replace them	
6	Checking the actuator and the spring	The actuator does not operate properly.	If the actuator or the spring of the MP conveying sensor is deformed or, does not operate correctly, replace them.	
7	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• MP conveying sensor - Engine relay PWB</li> <li>• MP conveying clutch - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
8	Checking the MP conveying sensor	The MP conveying sensor is not properly attached, or it is faulty.	Reattach the MP conveying sensor. If it is not repaired, replace it.	
9	Checking the MP conveying clutch	The MP conveying clutch is not properly attached, or it is faulty.	Reattach the MP conveying clutch. If it is not repaired, replace it.	

Step	Check description	Assumed cause	Measures	Reference
10	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
11	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
12	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## J1403/J1404: PF paper feed sensor 2 non-arrival jam

### Target: paper feeder (2, 3)

The PF feed sensor of cassette 2 does not turn on when feeding from cassette 3 and 4.

Step	Check description	Assumed cause	Measures	Reference
1	(When the paper skew occurs) Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	(When the paper skew occurs) Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
3	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	
4	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
5	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
6	(When the paper conveying was delayed) Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
7	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
8	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	

Step	Check description	Assumed cause	Measures	Reference
9	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
10	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
11	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
12	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF feed sensor - PF PWB (1st paper feeder)	
13	Checking the PF paper feed sensor	The PF feed sensor is not properly attached, or it is faulty.	Reattach the PF feed sensor in the 1st paper feeder. If it is not repaired, replace it.	
14	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB of paper feeder 1	

### J1413/J1414: PF paper feed sensor 2 stay jam

#### Target: paper feeder (2, 3)

The PF feed sensor of cassette 2 does not turn off when feeding from cassette 3 and 4.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
3	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	
4	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	



Step	Check description	Assumed cause	Measures	Reference
5	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
6	Checking the PF cover	The PF cover is deformed.	Check if the PF cover is closed securely. If not closed due to deformation, replace it.	
7	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
8	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
9	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
10	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
11	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
12	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF feed sensor - PF PWB (1st paper feeder) • PF conveying clutch - PF PWB	
13	Checking the PF paper feed sensor	The PF feed sensor is not properly attached, or it is faulty.	Reattach the PF feed sensor in the 1st paper feeder. If it is not repaired, replace it.	
14	Checking the PF conveying clutch	The PF conveying clutch is not properly attached, or it is faulty.	Reattach the PF conveying clutch. If it is not repaired, replace it.	
15	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB of paper feeder 1	
16	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

## J1604: PF paper feed sensor 3 non-arrival jam

### Target: Paper feeder (3rd)

The PF feed sensor of cassette 3 does not turn on when feeding from cassette 4.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
3	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	
4	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
5	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
6	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
7	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
8	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
9	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
10	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	

Step	Check description	Assumed cause	Measures	Reference
11	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF feed sensor - PF PWB (2nd paper feeder)	
12	Checking the PF paper feed sensor	The PF feed sensor is not properly attached, or it is faulty.	Reattach the PF feed sensor in the 2nd paper feeder. If it is not repaired, replace it.	
13	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB of paper feeder 2.	

### J1614: PF paper feed sensor 3 stay jam

#### Target: Paper feeder (3rd)

The PF feed sensor of cassette 3 does not turn off when feeding from cassette 4.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
3	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	
4	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
5	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
6	(In case paper conveying delays) Checking the PF cover	The PF cover is deformed.	Check if the PF cover is closed securely. If not closed due to deformation, replace it.	
7	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	

Step	Check description	Assumed cause	Measures	Reference
8	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
9	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
10	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
11	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
12	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF feed sensor - PF PWB (2nd paper feeder) • PF conveying clutch - PF PWB	
13	Checking the PF paper feed sensor	The PF feed sensor is not properly attached, or it is faulty.	Reattach the PF feed sensor in the 2nd paper feeder. If it is not repaired, replace it.	
14	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB of paper feeder 2.	
15	Checking the PF conveying clutch	The PF conveying clutch is not properly attached, or it is faulty.	Reattach the PF conveying clutch. If it is not repaired, replace it.	
16	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

### J4002/J4003/J4004: Registration sensor non-arrival jam

#### Target: paper feeder (1 to 3)

The registration sensor does not turn on during paper feed from cassette 2-4.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	(When the paper skew occurs) Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	

Step	Check description	Assumed cause	Measures	Reference
3	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	
4	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
5	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
6	(When the paper conveying was delayed) Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	
7	(In case paper conveying delays) Checking the PF cover	The PF cover is deformed.	Check if the PF cover is closed securely. If not closed due to deformation, replace it.	
8	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
9	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
10	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
11	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
12	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
13	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• Registration sensor - Main/engine PWB</li> <li>• Registration clutch - Main/engine PWB</li> </ul>	

Step	Check description	Assumed cause	Measures	Reference
14	Checking the registration sensor	The registration sensor is not properly attached, or it is faulty.	Reattach the regist sensor. If it is not repaired, replace it.	
15	Checking the registration clutch	The registration clutch is not properly attached, or it is faulty.	Reattach the registration clutch. If it is not repaired, replace it.	
16	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
17	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J4009: Registration sensor non-arrival jam

The registration sensor does not turn on during paper feed from the MP tray.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	Checking the MP paper feed roller	The paper conveying performance of the MP feed roller is not enough.	Clean or replace the MP feed roller	
3	Resetting the MP paper width guides	The locations of the MP paper width guides do not match the paper size.	Reset the MP paper width guides to match the paper size.	
4	Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
5	Checking the MP conveying guide	The paper hooks with the MP conveying guide.	Reattach the MP conveying guide. Also, remove the burrs on the paper conveying face.	
6	Checking the MP conveying guide	The MP conveying guide is deformed.	Check if the MP conveying guide is closed securely. Then, replace it if it is deformed.	
7	Re-loading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
8	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	

Step	Check description	Assumed cause	Measures	Reference
9	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
10	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
11	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
12	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Registration sensor - Main/engine PWB • Registration clutch - Main/engine PWB	
13	Checking the registration sensor	The registration sensor is not properly attached, or it is faulty.	Reattach the regist sensor. If it is not repaired, replace it.	
14	Checking the registration clutch	The registration clutch is not properly attached, or it is faulty.	Reattach the registration clutch. If it is not repaired, replace it.	
15	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
16	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J4012/J4013/J4014: Registration sensor stay jam

#### Target: paper feeder (1 to 3)

The registration sensor does not turn off during paper feed from cassette 2-4.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	

Step	Check description	Assumed cause	Measures	Reference
3	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
4	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
5	(When the multi-feeding occurred) Checking the paper feed roller and the separation pad	The paper fanning is not enough.	Clean the feed roller and the separation pad. Or, replace them.	
6	Checking the conveying rollers	The paper conveying force of the conveying rollers is insufficient.	Clean or replace the conveying related rollers.	
7	(In case multiple paper is fed) Reloading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
8	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
9	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
10	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
11	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
12	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• Registration sensor - Main/engine PWB</li> <li>• Registration clutch - Main/engine PWB</li> </ul>	
13	Checking the registration sensor	The registration sensor is not properly attached, or it is faulty.	Reattach the regist sensor. If it is not repaired, replace it.	



Step	Check description	Assumed cause	Measures	Reference
14	Checking the registration clutch	The registration clutch is not properly attached, or it is faulty.	Reattach the registration clutch. If it is not repaired, replace it.	
15	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
16	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J4019: Registration sensor stay jam

The registration sensor does not turn off during paper feed from the MP tray.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	(When the paper skew occurs) Relocating the MP paper width guides	The locations of the MP paper width guides do not match the paper size.	Reset the MP paper width guides to match the paper size.	
3	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
4	(When the paper skew occurs) Checking the MP conveying guide	The paper hooks with the MP conveying guide.	Reattach the MP conveying guide. Also, remove the burrs on the paper conveying face.	
5	(When the multi-feeding occurred) Checking the MP paper feed roller and the MP separation pad	The paper fanning is not enough.	Clean the MP feed roller and MP separation pad, or replace them	
6	(When the multi-feeding occurred) Checking the MP conveying roller	The paper conveying performance of the MP conveying roller is not enough.	Clean or replace the MP conveying roller	
7	(In case multiple paper is fed) Reloading paper	The cut-end of the paper is crushed.	Fan the paper well and load it by reversing the paper direction	
8	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
9	Checking the paper	The paper is curled downward or wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	

Step	Check description	Assumed cause	Measures	Reference
10	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
11	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
12	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Registration sensor - Main/engine PWB • Registration clutch - Main/engine PWB	
13	Checking the registration sensor	The registration sensor is not properly attached, or it is faulty.	Reattach the regist sensor. If it is not repaired, replace it.	
14	Checking the registration clutch	The registration clutch is not properly attached, or it is faulty.	Reattach the registration clutch. If it is not repaired, replace it.	
15	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
16	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J4201/J4202/J4203/J4204/J4208/J4209: Exit sensor non-arrival jam

The paper is wrapped around the fuser roller and the exit sensor does not turn on during paper feed from cassette 1-4, duplex section or the MP tray.

Step	Check description	Assumed cause	Measures	Reference
1	Adjusting the paper leading edge timing	The margin at the paper leading edge is incorrect.	If each margin shift is regular, execute U034 to adjust the leading edge timing .	
2	(When the paper skew occurs) Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
3	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	
4	(When the paper skew occurs) Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	

Step	Check description	Assumed cause	Measures	Reference
5	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
6	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
7	(When the paper skew occurs) Checking the conveying rollers	The paper conveying force of the conveying rollers is insufficient.	Clean the middle roller or the registration roller. If worn down, replace it.	
8	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
9	Checking the paper	The paper is wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
10	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
11	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
12	Checking the fuser unit	Foreign objects adhere to the fuser press roller or fuser heat roller	Clean the fuser press roller or replace the fuser unit	
13	Checking the fuser separation plate	Foreign objects such as toner are on the fuser separation plate. Or, the fuser separation plate is deformed or improperly attached.	Replace the fuser unit.	
14	Cleaning the machine inside	The machine inside is contaminated with toner.	Clean the machine inside.	
15	Checking the paper	The paper curls.	Replace with long grain paper.	
16	Changing the settings	The actual paper and the paper settings (media type, paper size) do not match.	Select the proper media type in the system menu.	

Step	Check description	Assumed cause	Measures	Reference
17	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Exit sensor (Exit PWB) - Main/engine PWB • Fuser motor - Engine relay PWB • Engine relay PWB - Main/engine PWB	
18	Checking the exit PWB	The exit PWB is not properly attached, or it is faulty.	Reattach the exit PWB. If it is not repaired, replace it.	
19	Checking the fuser motor	The fuser motor is not properly attached, or it is faulty.	Reattach the fuser motor. If it is not repaired, replace it.	
20	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
21	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
22	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J4211/J4212/J4213/J4214/J4218/J4219: Conveying sensor stay jam

The paper jam occurs inside the fuser unit and the exit sensor does not turn off during paper feed from cassette 1-4, duplex section or the MP tray.

Step	Check description	Assumed cause	Measures	Reference
1	Adjusting the paper leading edge timing	The margin at the paper leading edge is incorrect.	If each margin shift is regular, execute U034 to adjust the leading edge timing .	
2	(When the paper skew occurs) Checking the paper path	The paper is caught with a piece of paper, etc.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
3	(When the paper skew occurs) Relocating the paper width guides	The locations of the paper width guides do not fit with the paper size.	Relocate the paper width guides to fit them with the paper size.	
4	(When the paper skew occurs) Checking the paper feed roller	The conveying function of the paper feed roller is not enough.	Clean the paper feed roller surface. If worn down, replace it.	

Step	Check description	Assumed cause	Measures	Reference
5	(When the paper skew occurs) Checking the actuator and the spring	The actuator does not operate properly.	The actuator or the spring is deformed. If the actuator does not properly operate, replace it.	
6	(In case paper skews) Checking the conveying guide	The paper is caught with the conveying guide.	Reattach the conveying guide. Remove the burrs on the conveying guide surface or replace the conveying guide if there are burrs on it.	
7	(When the paper skew occurs) Checking the conveying rollers	The paper conveying force of the conveying rollers is insufficient.	Clean the middle roller or the registration roller. If worn down, replace it.	
8	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
9	Checking the paper	The paper is wavy.	Correct or replace paper. If you cannot get user agreement about the paper replacement, relocate the leading end of paper and the trailing end or reload paper upside down.	
10	Checking the paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
11	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
12	Checking the fuser unit	Foreign objects adhere to the fuser press roller or fuser heat roller	Clean the fuser press roller or replace the fuser unit	
13	Checking the fuser separation plate	Foreign objects such as toner are on the fuser separation plate. Or, the fuser separation plate is deformed or improperly attached.	Replace the fuser unit.	
14	Cleaning the machine inside	The machine inside is contaminated with toner.	Clean the machine inside.	
15	Checking the paper	The paper curls.	Replace with long grain paper.	
16	Changing the settings	The actual paper and the paper settings (media type, paper size) do not match.	Select the proper media type in the system menu.	

Step	Check description	Assumed cause	Measures	Reference
17	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Exit sensor (Exit PWB) - Main/engine PWB • Fuser motor - Engine relay PWB • Engine relay PWB - Main/engine PWB	
18	Checking the exit PWB	The exit PWB is not properly attached, or it is faulty.	Reattach the exit PWB. If it is not repaired, replace it.	
19	Checking the fuser motor	The fuser motor is not properly attached, or it is faulty.	Reattach the fuser motor. If it is not repaired, replace it.	
20	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
21	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
22	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J4301/J4302/J4303/J4304/J4305/J4309: DU sensor non arrival jam

#### Target: 40ppm model

The DU sensor does not turn on after the duplex reversal when feeding from cassette 1 to 4 or MP tray.

Step	Check description	Assumed cause	Measures	Reference
1	(When paper is bent before the DU conveying roller) Checking paper path	Paper is caught up by the conveying guide or paper piece.	If there is a paper piece or foreign object on the conveying side or a burr on the conveying side of the conveying guide or on the parts such as actuator, remove it or replace it. If there is a scratch, deformation or floating on the sheet or film, correct or replace it.	
2	(When paper is bent before the DU conveying roller) Replacing paper	The paper curls.	Replace with long grain paper.	
3	(When paper is bent before the DU conveying roller) Replacing paper	Paper stiffness is lowered with moisture.	Replace the paper.	

Step	Check description	Assumed cause	Measures	Reference
4	(When paper is bent before the DU conveying roller) Changing setting	The actual paper and the paper settings (media type, paper size) do not match.	Select the proper media type in the system menu.	
5	Checking the paper	foreign objects are on the paper.	Remove the paper with foreign objects.	
6	Checking the paper	The paper leading edge is bent.	Remove the bent paper.	
7	Checking the paper	The paper is wavy.	Correct or replace paper. If difficult to replace, re-load paper by switching top and bottom ends or turning it over.	
8	Checking the paper conveying parts	The roller, the guide, etc. is not attached properly. Or, they are dirty, deformed, worn out.	Clean , repair and reattach the conveying parts such as the roller, guide, etc. If not repaired, replace it.	
9	(When paper is skewed) Checking paper	Unspecified papers are used.	Explain to the user to use the paper within the specifications.	
10	(For paper conveyed in skew) checking the exit pulley	The exit pulley pressure is not enough	Reattach the exit pulley. If the pressing parts are deformed or damaged, replace them.	
11	(When paper is skewed) Checking the DU conveying roller	Conveying capability of the DU conveying roller is not enough.	Clean the DU conveying roller. If the surface is worn down, replace it.	
12	(When paper is skewed) Checking the DU conveying pulleys	Pressure of the DU conveying pulley is not enough.	Reattach the DU conveying pulley L. If the pressing parts are deformed or damaged, replace them.	
13	Checking the connection	The exit unit connector is not connected properly. (Pin is disconnected, etc.)	Reconnect the connector of the exit unit.	
14	(When paper jam occurs at the DU conveying roller) Checking the drive parts	The DU conveying roller does not rotate as the drive parts are faulty.	Repair the driving parts between the conveying developing motor and the DU conveying roller L. if they do not operate correctly due to the damage, etc., replace them.	

Step	Check description	Assumed cause	Measures	Reference
15	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • DU sensor - Engine relay PWB • DU clutch - Engine relay PWB • Engine relay PWB - Main/engine PWB	
16	Checking the DU sensor	DU sensor does not operate correctly.	Reattach the DU sensor. If it is not repaired, replace it.	
17	(When paper jam occurs at the DU conveying roller) Checking the DU clutch	The DU conveying roller does not rotate as DU clutch does not operate correctly.	Reattach the DU clutch. If it is not repaired, replace it.	
18	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
19	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
20	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### J4311/J4312/J4313/J4314/J4315/J4319: DU sensor stay jam

#### Target: 40ppm model

The DU sensor does not turn off after the duplex reversal when feeding from cassette 1 to 4 or MP tray.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper conveying parts	The roller, the guide, etc. is not attached properly. Or, they are dirty, deformed, worn out.	Clean , repair and reattach the conveying parts such as the roller, guide, etc. If not repaired, replace it.	
2	(When paper jam occurs at the DU conveying roller) Checking the drive parts	The DU conveying roller does not rotate as the drive parts are faulty.	Repair the driving parts between the conveying developing motor and the DU conveying roller S. if they do not operate correctly due to the damage, etc., replace them.	



Step	Check description	Assumed cause	Measures	Reference
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• DU sensor - Engine relay PWB</li> <li>• DU clutch - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
4	Checking the DU sensor	DU sensor does not operate correctly.	Reattach the DU sensor. If it is not repaired, replace it.	
5	Checking the DU clutch	DU clutch does not operate correctly.	Reattach the DU clutch. If it is not repaired, replace it.	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
8	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## **7-3Self diagnostic**

If the parts of the failure cause is not supplied, replace the unit that includes it.  
Before attempting to check the fuser unit and the low voltage power supply PWB, be sure to turn the power switch off and unplug the machine from power. (Allow at least 5 s before starting to conduct service until the capacitors on the circuit boards have been completely discharged.)

## (1) Self diagnostic codes

### (1-1) Error codes list

Error code	Contents
C0100	Backup memory device error
C0120	MAC address data error
C0130	Backup memory reading/writing error
C0140	Backup memory data error
C0150	EEPROM writing / reading error
C0160	EEPROM data error
C0170	Charger count error
C0190	Backup memory device error
C0360	Communication error between the engine PWB and ASIC
C0800	Image processing error
C0840	RTC error ('Time for maintenance T' appears)
C1010	Lift motor error
C1020	PF lift motor 1 error
C1030	PF lift motor 2 error
C1040	PF lift motor 3 error
C1810	Paper Feeder communication error
C1820	Paper feeder communication error
C1830	Paper feeder communication error
C1900	Paper Feeder EEPROM error
C1910	Paper feeder EEPROM error
C1920	Paper feeder EEPROM error
C2101	Developer motor steady state error
C2111	Developer motor start-up error
C2201	Drum motor 2 steady-state error
C2202	Drum motor 1 steady-state error
C2211	Drum motor 2 standby error
C2212	Drum motor 1 standby error
C2500	Conveying developer motor error
C2600	PF feed motor error
C2610	PF feed motor error
C2620	PF feed motor error
C2760	Primary transfer motor startup error
C2820	Primary transfer motor steady-state error
C4001	Polygon motor KM startup error
C4002	Polygon motor CY startup error

<b>Error code</b>	<b>Contents</b>
C4011	Polygon motor KM stabilization error
C4012	Polygon motor CY stabilization error
C4101	Laser error (Black)
C4102	Laser error (Cyan)
C4103	Laser error (Magenta)
C4104	Laser error (Yellow)
C4201	Laser BD steady-state error (Black)
C4202	Laser BD steady-state error (Cyan)
C4203	Laser BD steady-state error (Magenta)
C4204	Laser BD steady-state error (Yellow)
C4600	LSU cleaning motor error
C4700	VIDEO ASIC device error
C5101	Charger error (Black)
C5102	Charger error (Cyan)
C5103	Charger error (Magenta)
C5104	Charger error (Yellow)
C6000	Broken fuser heater 1 error
C6020	Fuser thermistor 2 high temperature error
C6030	Broken fuser thermistor 1 error
C6040	Fuser heater error
C6050	Fuser thermistor 2 low temperature error
C6200	Fuser heater 1 error
C6200	Fuser heater 2 error
C6220	Fuser heater high temperature error
C6230	Broken fuser thermistor 1 error
C6250	Fuser thermistor 1 low temperature error
C6400	Zero-cross signal error
C6610	Press-release sensor error
C6910	Engine firmware unexpected error
C7001	Toner motor K error
C7002	Toner motor C error
C7003	Toner motor M error
C7004	Toner motor Y error
C7101	Toner sensor K error
C7102	Toner sensor C error
C7103	Toner sensor M error
C7104	Toner sensor Y error

Error code	Contents
C7200	Developer thermistor error
C7221	LSU thermistor K error
C7222	LSU thermistor C error
C7401	Developer unit K type mismatch error
C7402	Developer unit C type mismatch error
C7403	Developer unit M type mismatch error
C7404	Developer unit Y type mismatch error
C7411	Drum unit K type mismatch error
C7412	Drum unit C type mismatch error
C7413	Drum unit M type mismatch error
C7414	Drum unit Y type mismatch error
C7601	ID sensor 1 error (Machine left side)
C7602	ID sensor 2 error (Machine right side)
C7611	Bias calibration read value error (Black)
C7612	Bias calibration read value error (Cyan)
C7613	Bias calibration read value error (Magenta)
C7614	Bias calibration read value error (Yellow)
C7620	Automatic color registration failure
C7800	Outer thermistor error
C7901	Drum unit EEPROM error (Black)
C7902	Drum unit EEPROM error (Cyan)
C7903	Drum unit EEPROM error (Magenta)
C7904	Drum unit EEPROM error (Yellow)
C7911	Developer unit EEPROM error (Black)
C7912	Developer unit EEPROM error (Cyan)
C7913	Developer unit EEPROM error (Magenta)
C7914	Developer unit EEPROM error (Yellow)
C9540	Backup data error

### C0100: Backup memory device error

The abnormal status is output from the flash memory.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Reinstalling the EEPROM	The EEPROM is not properly attached.	Reattach the EEPROM on the main/engine PWB.	
3	Replacing the EEPROM	The EEPROM is faulty.	Replace the EEPROM on the main/engine PWB and execute U004 when C0180 appears	
4	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### C0120: MAC address data error

MAC address data was incorrect data.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The flash memory does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Main/engine PWB replacement	The MAC address is incorrect.	Replace the main/engine PWB when the MAC address is not indicated on the network status page.	

### C0130: Backup memory reading/writing error

The reading or writing into the flash memory is unavailable.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The flash memory does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### C0140: Backup memory data error

The data read from the flash memory is judged as abnormal at the startup.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The flash memory does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### C0150: EEPROM writing / reading error

1. No response from the device is detected for 5ms or more 5 times continuously when reading / writing the data.
2. The reading data of 2 points mismatches 8 times continuously.
3. The reading data and the writing data mismatch 8 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Reinstalling the EEPROM	The EEPROM is not properly attached.	Reattach the EEPROM on the main/engine PWB.	
3	Replacing the EEPROM	The EEPROM is faulty.	Replace the EEPROM on the main/engine PWB.	
4	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### C0160: EEPROM data error

The data read from the EEPROM is judged as abnormal.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Replacing the EEPROM	The EEPROM is faulty.	Replace the EEPROM on the main/engine PWB and execute U004.	



### C0170: Charger count error

The values in one of the billing counters, life counter or the scanner counter mismatch between the main side and the engine side.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling the EEPROM	The EEPROM for the different main unit is installed.	Execute U004 to check machine serial number at MAIN and ENGINE. If different numbers are displayed, attach the proper EEPROM to the main/engine PWB	
2	Replacing the EEPROM	The EEPROM is faulty.	Replace the EEPROM on the main/engine PWB and execute U004 when C0180 appears	
3	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### C0190: Backup memory device error

Data from the FRAM cannot be read at start-up (3 times retries)

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	FRAM (main/engine PWB) is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### C0360: Communication error between the engine PWB and ASIC

The checksum error appears or the video signal is not reversed when checking the read-back data after transmitting the data. (Successive failure 10 times)

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The main/engine PWB does not operate correctly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the engine relay PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the engine relay PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the engine relay PWB.	
3	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### C0800: Image processing error

The print sequence jam (J010x) is detected 2 times in succession.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the image data	The image data is faulty.	When this issue occurs only when handling the certain image data, check if the image data is faulty.	
2	Checking the situation	The printing operation of the certain file is faulty.	Acquire the job's log if the phenomenon can be reproduced by specifying the job when the error was detected.	
3	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

**C0840: RTC error ('Time for maintenance T' appears)**

[Check at start-up]

- RTC values are old.
- Power has not been turned on for over 5 years.
- RTC value is older than 2000/1/1 00:01.

[Periodic check per 5 minutes after start-up]

- RTC values are older than the ones at the last check.
- Partial operation by power reset after C840 error and 'Time for Maintenance T' is indicated.

Step	Check description	Assumed cause	Measures	Reference
1	Setting the RTC	RTC is not properly set.	Set the RTC in the System Menu.	
2	Checking the life of the backup battery	The backup battery has run out.	If the same service call error appears after resetting the power, check the backup battery. If it has run out, replace the backup battery on the main/engine PWB.	
3	Reattaching the main/engine PWB	The main/engine PWB is not properly attached.	Retighten the screws for the main/engine PWB.	
4	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

## C1010: Lift motor error

After installing cassette 1, either of the following 1 to 4 is detected 5 times continuously.

1. The lift motor excess current is detected for 80ms.
2. The lift sensor does not turn on when passing 10s after installing the cassette.
3. During printing, after detecting the lift sensor off, the lift sensor does not turn on when passing 1s after the ascending control.
4. During motor operation, the lock signal is detected for 1s continuously and it is detected 5 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the lift plate	The lift plate does not operate properly.	If the lift plate does not ascend or descend, correct it or replace it.	
2	Checking the drive gear	The drive gear does not rotate properly.	Check if MP lift plate elevation drive gears rotate or have no excessive load. And apply the grease to the frictional parts and repair the related parts so that they can rotate properly.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Lift sensor - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
4	Checking the lift motor	The lift motor is not properly attached, or it is faulty.	Reattach the lift motor. If it is not repaired, replace it.	
5	Checking the lift sensor	The lift sensor is not properly attached, or it is faulty.	Reattach PF lift upper limit sensor. If not repaired, replace it.	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
8	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C1020: PF lift motor 1 error

### Target: Paper feeder (1st)

After installing the cassette, either of the following 1 to 3 is detected 5 times continuously.

1. The PF lift motor excess current is detected for 80ms.
2. The PF lift sensor does not turn on when passing 10s after installing the cassette.
3. During printing, after detecting the PF lift sensor off, the PF lift sensor does not turn on when passing 1s after the ascending control.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the lift plate	The lift plate does not operate properly.	If the lift plate does not ascend or descend, correct it or replace it.	
2	Checking the drive gear	The drive gear does not rotate properly.	Check if MP lift plate elevation drive gears rotate or have no excessive load. And apply the grease to the frictional parts and repair the related parts so that they can rotate properly.	
3	Reinstalling the paper feeder	The paper feeder is not properly installed.	Reinstall the paper feeder	
4	Checking the connection	The connector is not connected properly or, the wire or drawer connector is faulty.	Check the following wire connection, and correct the terminals and reconnect the connectors all the way. If the wire has no continuity or the drawer connector is faulty, replace them. • PF lift sensor - PF PWB • PF lift motor - PF PWB • PF PWB - Drawer connector • Drawer connector - PF PWB (2nd paper feeder)	
5	Checking the PF lift motor	PF lift motor is not attached properly or faulty.	Reattach the PF lift motor. If it is not repaired, replace it.	
6	Checking the PF lift sensor	The PF lift motor is not properly attached, or it is faulty.	Reattach the PF lift sensor. If it is not repaired, replace it.	
7	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	
8	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
9	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	

## C1030: PF lift motor 2 error

### Target: Paper feeder (2nd)

After installing the cassette, either of the following 1 to 3 is detected 5 times continuously.

1. The PF lift motor excess current is detected for 80ms.
2. The PF lift sensor does not turn on when passing 10s after installing the cassette.
3. During printing, after detecting the PF lift sensor off, the PF lift sensor does not turn on when passing 1s after the ascending control.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the lift plate	The lift plate does not operate properly.	If the lift plate does not ascend or descend, correct it or replace it.	
2	Checking the drive gear	The drive gear does not rotate properly.	Check if MP lift plate elevation drive gears rotate or have no excessive load. And apply the grease to the frictional parts and repair the related parts so that they can rotate properly.	
3	Reinstalling the paper feeder	The paper feeder is not properly installed.	Reinstall the paper feeder	
3	Checking the connection	The connector is not connected properly or, the wire or drawer connector is faulty.	Check the following wire connection, and correct the terminals and reconnect the connectors all the way. If the wire has no continuity or the drawer connector is faulty, replace them. • PF lift sensor - PF PWB • PF lift motor - PF PWB • PF PWB - Drawer connector • Drawer connector - PF PWB (2nd paper feeder)	
4	Checking the PF lift motor	PF lift motor is not attached properly or faulty.	Reattach the PF lift motor. If it is not repaired, replace it.	
5	Checking the PF lift sensor	The PF lift sensor is not properly attached, or it is faulty.	Reattach the PF lift sensor. If it is not repaired, replace it.	
6	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

## C1040: PF lift motor 3 error

### Target: Paper feeder (3rd)

After installing the cassette, either of the following 1 to 3 is detected 5 times continuously.

1. The PF lift motor excess current is detected for 80ms.
2. The PF lift sensor does not turn on when passing 10s after installing the cassette.
3. During printing, after detecting the PF lift sensor off, the PF lift sensor does not turn on when passing 1s after the ascending control.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the lift plate	The lift plate does not operate properly.	If the lift plate does not ascend or descend, correct it or replace it.	
2	Checking the drive gear	The drive gear does not rotate properly.	Check if MP lift plate elevation drive gears rotate or have no excessive load. And apply the grease to the frictional parts and repair the related parts so that they can rotate properly.	
3	Reinstalling the paper feeder	The paper feeder is not properly installed.	Reinstall the paper feeder	
4	Checking the connection	The connector is not connected properly or, the wire or drawer connector is faulty.	Check the following wire connection, and correct the terminals and reconnect the connectors all the way. If the wire has no continuity or the drawer connector is faulty, replace them. • PF lift sensor - PF PWB • PF lift motor - PF PWB • PF PWB - Drawer connector • Drawer connector - PF PWB (2nd paper feeder)	
5	Checking the PF lift motor	PF lift motor is not attached properly or faulty.	Reattach the PF lift motor. If it is not repaired, replace it.	
6	Checking the PF lift sensor	The PF lift sensor is not properly attached, or it is faulty.	Reattach the PF lift sensor. If it is not repaired, replace it.	
7	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

## C1810: Paper Feeder communication error

### Target: Paper feeder (1st)

The communication error was detected 10 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling the paper feeder	The paper feeder is not properly installed.	Reinstall the paper feeder	
2	Checking the connection	The connector is not connected properly or, the wire or drawer connector is faulty.	Check the following wire connection, and correct the terminals and reconnect the connectors all the way. If the wire has no continuity or the drawer connector is faulty, replace them. • PF lift sensor - PF PWB • PF lift motor - PF PWB • PF PWB - Drawer connector • Drawer connector - PF PWB (2nd paper feeder)	
3	Firmware upgrade	The firmware is not the latest version.	Upgrade the firmware to the latest version.	
4	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	
5	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	

## C1820: Paper feeder communication error

### Target: Paper feeder (2nd)

The communication error was detected 10 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling the paper feeder	The paper feeder is not properly installed.	Reinstall the paper feeder	
2	Checking the connection	The connector is not connected properly or, the wire or drawer connector is faulty.	Check the following wire connection, and correct the terminals and reconnect the connectors all the way. If the wire has no continuity or the drawer connector is faulty, replace them. • PF lift sensor - PF PWB • PF lift motor - PF PWB • PF PWB - Drawer connector • Drawer connector - PF PWB (2nd paper feeder)	
3	Firmware upgrade	The firmware is not the latest version.	Upgrade the firmware to the latest version.	
4	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	



Step	Check description	Assumed cause	Measures	Reference
5	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB in the 1st paper feeder.	

### C1830: Paper feeder communication error

#### Target: Paper feeder (3rd)

The communication error was detected 10 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling the paper feeder	The paper feeder is not properly installed.	Reinstall the paper feeder	
2	Checking the connection	The connector is not connected properly or, the wire or drawer connector is faulty.	Check the following wire connection, and correct the terminals and reconnect the connectors all the way. If the wire has no continuity or the drawer connector is faulty, replace them. • PF lift sensor - PF PWB • PF lift motor - PF PWB • PF PWB - Drawer connector • Drawer connector - PF PWB (2nd paper feeder)	
3	Firmware upgrade	The firmware is not the latest version.	Upgrade the firmware to the latest version.	
4	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	
5	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB in the 2nd paper feeder.	

### C1900: Paper Feeder EEPROM error

#### Target: Paper feeder (1st)

#### For the internal count

The writing data and the reading data mismatch 4 times continuously when writing.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling the paper feeder	The paper feeder is not properly installed.	Reinstall the paper feeder	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert the connectors into all the connectors on the PF PWB. Also, if there is no continuity, replace the wire.	
3	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

### C1910: Paper feeder EEPROM error

#### Target: Paper feeder (2nd)

#### For the internal count

The writing data and the reading data mismatch 4 times continuously when writing.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling the paper feeder	The paper feeder is not properly installed.	Reinstall the paper feeder	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert the connectors into all the connectors on the PF PWB. Also, if there is no continuity, replace the wire.	
3	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

### C1920: Paper feeder EEPROM error

#### Target: Paper feeder (3rd)

#### For the internal count

The writing data and the reading data mismatch 4 times continuously when writing.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling the paper feeder	The paper feeder is not properly installed.	Reinstall the paper feeder	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert the connectors into all the connectors on the PF PWB. Also, if there is no continuity, replace the wire.	
3	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

### C2101: Developer motor steady state error

The steady signal turns off for 2s continuously after the motor is stabilized.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the developer unit	The developer roller is faulty.	Replace developer unit C, M or Y if the developer roller does not rotate.	
2	Checking the driving parts	The developer motor drive is not transmitted correctly.	Check if the drive gear rotates smoothly and has no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates smoothly.	

Step	Check description	Assumed cause	Measures	Reference
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Developer motor - Engine relay PWB • Engine relay PWB - Main/engine PWB	
4	Checking the developer motor	The developer motor is not properly attached, or it is faulty.	Reattach the developer motor. If it is not repaired, replace it.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C2111: Developer motor start-up error

The steady signal does not turn on after passing 3s since the motor started up

Step	Check description	Assumed cause	Measures	Reference
1	Checking the developer unit	The developer roller is faulty.	Replace developer unit C, M or Y if the developer roller does not rotate.	
2	Checking the driving parts	The developer motor drive is not transmitted correctly.	Check if the drive gear rotates smoothly and has no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates smoothly.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Developer motor - Engine relay PWB • Engine relay PWB - Main/engine PWB	

Step	Check description	Assumed cause	Measures	Reference
4	Checking the developer motor	The developer motor is not properly attached, or it is faulty.	Reattach the developer motor. If it is not repaired, replace it.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C2201: Drum motor 2 steady-state error

The steady signal turns off for 2s continuously after the motor is stabilized.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the drum unit and the developer unit	The drum does not rotate smoothly.	Check if the drum and the drum cleaning screw rotates manually. If it locks up, replace drum unit C or Y.	
2	Checking the driving parts	The drum motor 2 drive is not transmitted correctly.	Check if the drive gear rotates smoothly and has no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates smoothly.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Drum motor 2 - Engine relay PWB • Engine relay PWB - Main/engine PWB	
4	Checking drum motor 2	Drum motor 2 is not properly attached, or it is faulty.	Reattach drum motor 2. If it is not repaired, replace it.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C2202: Drum motor 1 steady-state error

The steady signal turns off for 2s continuously after the motor is stabilized.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the drum unit and the developer unit	The drum does not rotate smoothly.	Check if the drum and the drum cleaning screw rotates manually. If it locks up, replace drum unit K or M.	
2	Checking the driving parts	The drum motor 1 drive is not transmitted correctly.	Check if the drive gear rotates smoothly and has no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates smoothly.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Drum motor 1 - Engine relay PWB • Engine relay PWB - Main/engine PWB	
4	Checking drum motor 1	Drum motor 1 is not properly attached, or it is faulty.	Reattach drum motor 1. If it is not repaired, replace it.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C2211: Drum motor 2 standby error

The steady signal does not turn on after passing 3s since the motor started up

Step	Check description	Assumed cause	Measures	Reference
1	Checking the drum unit and the developer unit	The drum does not rotate smoothly.	Check if the drum and the drum cleaning screw rotates manually. If it locks up, replace drum unit C or Y.	
2	Checking the driving parts	The drum motor 2 drive is not transmitted correctly.	Check if the drive gear rotates smoothly and has no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates smoothly.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Drum motor 2 - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
4	Checking drum motor 2	Drum motor 2 is not properly attached, or it is faulty.	Reattach drum motor 2. If it is not repaired, replace it.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C2212: Drum motor 1 standby error

The steady signal does not turn on after passing 3s since the motor started up

Step	Check description	Assumed cause	Measures	Reference
1	Checking the drum unit and the developer unit	The drum does not rotate smoothly.	Check if the drum and the drum cleaning screw rotates manually. If it locks up, replace drum unit K or M.	
2	Checking the driving parts	The drum motor 1 drive is not transmitted correctly.	Check if the drive gear rotates smoothly and has no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates smoothly.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Drum motor 1 - Engine relay PWB • Engine relay PWB - Main/engine PWB	
4	Checking drum motor 1	Drum motor 1 is not properly attached, or it is faulty.	Reattach drum motor 1. If it is not repaired, replace it.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C2500: Conveying developer motor error

The steady signal does not turn on after passing 3s since the motor started up or the steady signal turns off for 2s continuously after the motor is stabilized

Step	Check description	Assumed cause	Measures	Reference
1	Checking the driving parts	The conveying developer motor drive is not transmitted correctly.	Check if the paper conveying roller and the drive gear rotate smoothly and have no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates smoothly.	
2	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Conveying developer motor - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> <li>• LSU - Main/engine PWB</li> </ul>	
3	Checking the conveying developer motor	The conveying developer motor is not properly attached, or it is faulty.	Reattach the conveying developer motor. If it is not repaired, replace it.	
4	Replacing the conveying drive unit	The conveying drive unit is faulty.	Replace the conveying drive unit.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	



## C2600: PF feed motor error

### Target: Paper feeder (1st)

The steady signal does not turn on for 5s continuously when the motor drives

Step	Check description	Assumed cause	Measures	Reference
1	Checking the driving parts	The PF feed motor drive is not transmitted correctly.	Check if the PF feed roller or the drive gear rotates or have no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates properly.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF feed motor - PF PWB	
3	Checking the PF feed motor	The PF feed motor is not properly attached, or it is faulty.	Reattach the PF feed motor. If it is not repaired, replace it.	
4	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

## C2610: PF feed motor error

### Target: Paper feeder (2nd)

The steady signal does not turn on for 5s continuously when the motor drives

Step	Check description	Assumed cause	Measures	Reference
1	Checking the driving parts	The PF feed motor drive is not transmitted correctly.	Check if the PF feed roller or the drive gear rotates or have no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates properly.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF feed motor - PF PWB	
3	Checking the PF feed motor	The PF feed motor is not properly attached, or it is faulty.	Reattach the PF feed motor. If it is not repaired, replace it.	
4	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

## C2620: PF feed motor error

### Target: Paper feeder (3rd)

The steady signal does not turn on for 5s continuously when the motor drives

Step	Check description	Assumed cause	Measures	Reference
1	Checking the driving parts	The PF feed motor drive is not transmitted correctly.	Check if the PF feed roller or the drive gear rotates or have no excessive load. And apply the grease to the frictional parts and repair the related parts so that the drive gear rotates properly.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • PF feed motor - PF PWB	
3	Checking the PF feed motor	The PF feed motor is not properly attached, or it is faulty.	Reattach the PF feed motor. If it is not repaired, replace it.	
4	Replacing the PF PWB	The PF PWB is faulty.	Replace the PF PWB.	

## C2760: Primary transfer motor startup error

The steady signal does not turn on after passing 3s since the motor started up

Step	Check description	Assumed cause	Measures	Reference
1	Checking the driving parts	The primary transfer motor drive is not transmitted correctly.	Check if the excessive load is given by rotating the drive gears, roller and the transfer belt, and clean the drive section for the primary transfer unit.	
2	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Primary transfer motor - Engine relay PWB • Engine relay PWB - Main/engine PWB	
3	Checking the primary transfer motor	The primary transfer motor is not properly attached, or it is faulty.	Reattach the primary transfer motor. If it is not repaired, replace it.	

Step	Check description	Assumed cause	Measures	Reference
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C2820: Primary transfer motor steady-state error

The steady signal turns off for 2s continuously after the motor is stabilized.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the driving parts	The primary transfer motor drive is not transmitted correctly.	Check if the excessive load is given by rotating the drive gears, roller and the transfer belt, and clean the drive section for the primary transfer unit.	
2	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Primary transfer motor - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
3	Checking the primary transfer motor	The primary transfer motor is not properly attached, or it is faulty.	Reattach the primary transfer motor. If it is not repaired, replace it.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4001: Polygon motor KM startup error

The steady signal of the motor does not turn on after passing 6s since the polygon motor starts up

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(KM) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (KM).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4002: Polygon motor CY startup error

The steady signal of the motor does not turn on after passing 6s since the polygon motor starts up

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(CY) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (CY).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4011: Polygon motor KM stabilization error

The steady signal of the motor turns off for 6s in succession after the polygon motor was stabilized

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(KM) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (KM).	

Step	Check description	Assumed cause	Measures	Reference
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4012: Polygon motor CY stabilization error

The steady signal of the motor turns off for 6s in succession after the polygon motor was stabilized

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(CY) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (CY).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4101: Laser error (Black)

The laser is not received for 1s since the light emission of the laser (Black) was started.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(KM) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (KM).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4102: Laser error (Cyan)

The laser is not received for 1s since the light emission of the laser (Cyan) was started.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(CY) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (CY).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4103: Laser error (Magenta)

The laser is not received for 1s since the light emission of the laser (Magenta) was started.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(KM) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (KM).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4104: Laser error (Yellow)

The laser is not received for 1s since the light emission of the laser (Yellow) was started.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(CY) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (CY).	

Step	Check description	Assumed cause	Measures	Reference
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4201: Laser BD steady-state error (Black)

The black BD signal is not detected during the polygon motor steady rotation

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(KM) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (KM).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4202: Laser BD steady-state error (Cyan)

The black Cyan signal is not detected during the polygon motor steady rotation

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(CY) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (CY).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4203: Laser BD steady-state error (Magenta)

The black Magenta signal is not detected during the polygon motor steady rotation

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(KM) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (KM).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4204: Laser BD steady-state error (Yellow)

The Yellow Magenta signal is not detected during the polygon motor steady rotation

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(CY) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (CY).	
3	Firmware upgrade	The firmware is faulty.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C4600: LSU cleaning motor error

Excess current was detected for 5s continuously during the LSU cleaning motor operation

Step	Check description	Assumed cause	Measures	Reference
1	Executing the Laser Scanner Cleaning	The LSU cleaning drive gear or the cleaning spiral does not smoothly rotate due to the load.	Execute Laser Scanner Cleaning.	
2	Cleaning the LSU	The LSU cleaning drive gear or the cleaning spiral does not smoothly rotate due to the load.	Clean the LSU cleaning drive gear and the cleaning spiral, and then apply grease to these parts.	



Step	Check description	Assumed cause	Measures	Reference
3	LSU replacement	The LSU cleaning drive gear or the cleaning spiral is deformed or there is a fault in them.	Replace the LSU.	
4	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU cleaning motor - Engine relay PWB	
5	Checking the LSU cleaning motor	The LSU cleaning motor is not properly attached, or it is faulty.	Reattach the LSU cleaning motor. If it is not repaired, replace it.	
6	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
7	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

#### C4700: VIDEO ASIC device error

1. The communication with VIDEO ASIC failed 5 times continuously.
2. After writing the data to VIDEO ASIC, the value mismatching error repeated 8 times continuously by trying to read the data from the same address.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The ASIC operation on the PWB is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Firmware upgrade	The firmware is not the latest version.	Upgrade the main firmware and the engine firmware to the latest version.	
3	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### C5101: Charger error (Black)

#### Target: 40ppm model

The rush-in current to drum unit K is less at the Vpp adjustment for the main charge adjustment

Step	Check description	Assumed cause	Measures	Reference
1	Checking the drum unit and the developer unit	The drum or drum screw does not rotate normally	Replace the drum unit if the drum or the drum screw does not rotate smoothly.	
2	Checking the main charger unit	The main charger unit is not attached properly	Reinstall the main charger unit on the drum unit properly. If it is not resolved, replace the main charger unit.	
3	Checking the connection	FFC is not properly connected, or it is faulty.	Clean the following FFC terminal of the FFC and reconnect. If the FFC terminal is deformed or FFC is short circuited, replace FFC. • High voltage PWB - Main/engine PWB	
4	Replacing the high voltage PWB	The high voltage PWB is faulty.	Replace the high voltage PWB.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the main firmware and the engine firmware to the latest version.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C5102: Charger error (Cyan)

#### Target: 40ppm model

The rush-in current to drum unit C is less at the Vpp adjustment for the main charge adjustment

Step	Check description	Assumed cause	Measures	Reference
1	Checking the drum unit and the developer unit	The drum or drum screw does not rotate normally	Replace the drum unit if the drum or the drum screw does not rotate smoothly.	
2	Checking the main charger unit	The main charger unit is not attached properly	Reinstall the main charger unit on the drum unit properly. If it is not resolved, replace the main charger unit.	
3	Checking the connection	FFC is not properly connected, or it is faulty.	Clean the following FFC terminal of the FFC and reconnect. If the FFC terminal is deformed or FFC is short circuited, replace FFC. • High voltage PWB - Main/engine PWB	

Step	Check description	Assumed cause	Measures	Reference
4	Replacing the high voltage PWB	The high voltage PWB is faulty.	Replace the high voltage PWB.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the main firmware and the engine firmware to the latest version.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C5103: Charger error (Magenta)

#### Target: 40ppm model

The rush-in current to drum unit M is less at the Vpp adjustment for the main charge adjustment

Step	Check description	Assumed cause	Measures	Reference
1	Checking the drum unit and the developer unit	The drum or drum screw does not rotate normally	Replace the drum unit if the drum or the drum screw does not rotate smoothly.	
2	Checking the main charger unit	The main charger unit is not attached properly	Reinstall the main charger unit on the drum unit properly. If it is not resolved, replace the main charger unit.	
3	Checking the connection	FFC is not properly connected, or it is faulty.	Clean the following FFC terminal of the FFC and reconnect. If the FFC terminal is deformed or FFC is short circuited, replace FFC. • High voltage PWB - Main/engine PWB	
4	Replacing the high voltage PWB	The high voltage PWB is faulty.	Replace the high voltage PWB.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the main firmware and the engine firmware to the latest version.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C5104: Charger error (Yellow)

### Target: 40ppm model

The rush-in current to drum unit Y is less at the Vpp adjustment for the main charge adjustment

Step	Check description	Assumed cause	Measures	Reference
1	Checking the drum unit and the developer unit	The drum or drum screw does not rotate normally	Replace the drum unit if the drum or the drum screw does not rotate smoothly.	
2	Checking the main charger unit	The main charger unit is not attached properly	Reinstall the main charger unit on the drum unit properly. If it is not resolved, replace the main charger unit.	
3	Checking the connection	FFC is not properly connected, or it is faulty.	Clean the following FFC terminal of the FFC and reconnect. If the FFC terminal is deformed or FFC is short circuited, replace FFC. • High voltage PWB - Main/engine PWB	
4	Replacing the high voltage PWB	The high voltage PWB is faulty.	Replace the high voltage PWB.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the main firmware and the engine firmware to the latest version.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C6000: Broken fuser heater 1 error

1. During warm-up, the temperature detected by fuser thermistor 2 does not reach 100°C / 212°F when passing 20s.
2. During warm-up, when passing 30s after the temperature detected by fuser thermistor 2 reaches 100°C / 212°F, the ready state temperature is not reached.

Step	Check description	Assumed cause	Measures	Reference
1	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Fuser unit (fuser thermistor) - Exit PWB • Exit PWB - Main/engine PWB • Low voltage PWB - Main/engine PWB	

Step	Check description	Assumed cause	Measures	Reference
3	Replacing the fuser unit	The normal temperature cannot be detected with the fuser heater not being turned on, broken fuser thermostat wire, etc.	Replace the fuser unit.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
6	Replacing the low voltage PWB	The low voltage PWB is faulty.	Replace the low voltage PWB when the fuser heaters always turn on.	
7	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	

### C6020: Fuser thermistor 2 high temperature error

Fuser thermistor 2 detects 240°C / 464°F or more for 1s.

Step	Check description	Assumed cause	Measures	Reference
1	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• Fuser unit (fuser thermistor) - Exit PWB</li> <li>• Exit PWB - Main/engine PWB</li> <li>• Low voltage PWB - Main/engine PWB</li> </ul>	
3	Replacing the fuser unit	The fuser thermistor cannot detect correct temperature due to foreign objects adhering to the fuser heat roller or fuser press roller, short-circuit of the fuser thermistor, etc.	Replace the fuser unit.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
6	Replacing the low voltage PWB	The low voltage PWB is faulty.	Replace the low voltage PWB when the fuser heaters always turn on.	

Step	Check description	Assumed cause	Measures	Reference
7	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	

### C6030: Broken fuser thermistor 1 error

Fuser thermistor 2 detects the low temperature for 1.6s when the fuser thermistor 1 detects 30 °C / 86 °F or more.

Step	Check description	Assumed cause	Measures	Reference
1	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Fuser unit (fuser thermistor) - Exit PWB • Exit PWB - Main/engine PWB	
3	Replacing the fuser unit	The normal temperature cannot be detected with the fuser heater not being turned on, broken fuser thermostat wire, etc.	Replace the fuser unit.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
6	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	

### C6040: Fuser heater error

The input from fuser thermistor 2 is abnormal for 1s continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Fuser unit (fuser thermistor) - Exit PWB • Exit PWB - Main/engine PWB	

Step	Check description	Assumed cause	Measures	Reference
3	Replacing the fuser unit	The normal temperature cannot be detected with the fuser heater not being turned on, broken fuser thermostat wire, etc.	Replace the fuser unit.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
6	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	

### C6050: Fuser thermistor 2 low temperature error

During standby or printing, the fuser thermistor 2 detected 100°C / 212°F or less for 1s continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the power supply voltage	The power supply voltage reduces.	Connect the power cord to a different wall outlet if the power supply voltage descends by 10% or more of the rated voltage, or multiple devices use the same outlet.	
2	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
3	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• Fuser unit (fuser thermistor) - Exit PWB</li> <li>• Exit PWB - Main/engine PWB</li> <li>• Low voltage PWB - Main/engine PWB</li> </ul>	
4	Replacing the fuser unit	The normal temperature cannot be detected with the fuser heater not being turned on, broken fuser thermostat wire, etc.	Replace the fuser unit.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
7	Replacing the low voltage PWB	The low voltage PWB is faulty.	Replace the low voltage PWB when the fuser heaters always turn on.	

Step	Check description	Assumed cause	Measures	Reference
8	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	

## C6200: Fuser heater 1 error

### Target: 30ppm model

1. During warm-up, the fuser thermistor 1 does not detect 100°C / 212°F if turning the fuser heater 1 on for 30s continuously.
2. During warm-up, if turning the fuser heater 1 on for 30s continuously after the temperature detected by the fuser thermistor 1 reaches 100°C / 212°F, the fuser thermistor 1 does not detect the ready state temperature.

Step	Check description	Assumed cause	Measures	Reference
1	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• Fuser unit (fuser thermistor) - Exit PWB</li> <li>• Exit PWB - Main/engine PWB</li> <li>• Low voltage PWB - Main/engine PWB</li> </ul>	
3	Replacing the fuser unit	The normal temperature cannot be detected with the fuser heater not being turned on, broken fuser thermostat wire, etc.	Replace the fuser unit.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
7	Replacing the low voltage PWB	The low voltage PWB is faulty.	Replace the low voltage PWB when the fuser heaters always turn on.	
8	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	



## C6200: Fuser heater 2 error

### Target: 35/40ppm model

1. During warm-up, fuser thermistor 1 does not detect 100°C / 212°F if turning the fuser heater 2 on for 30s continuously.
2. During warm-up, if turning the fuser heater 2 on for 30s continuously after the temperature detected by the fuser thermistor 1 reaches 100°C / 212°F , fuser thermistor 1 does not detect the ready state temperature.

Step	Check description	Assumed cause	Measures	Reference
1	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• Fuser unit (fuser thermistor) - Exit PWB</li> <li>• Exit PWB - Main/engine PWB</li> <li>• Low voltage PWB - Main/engine PWB</li> </ul>	
3	Replacing the fuser unit	The normal temperature cannot be detected with the fuser heater not being turned on, broken fuser thermostat wire, etc.	Replace the fuser unit.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
7	Replacing the low voltage PWB	The low voltage PWB is faulty.	Replace the low voltage PWB when the fuser heaters always turn on.	
8	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	

### C6220: Fuser heater high temperature error

Fuser thermistor 1 detected 240 °C / 464 °F for 1s continuously

Step	Check description	Assumed cause	Measures	Reference
1	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• Fuser unit (fuser thermistor) - Exit PWB</li> <li>• Exit PWB - Main/engine PWB</li> <li>• Low voltage PWB - Main/engine PWB</li> </ul>	
3	Replacing the fuser unit	The normal temperature cannot be detected with the fuser heater not being turned on, broken fuser thermostat wire, etc.	Replace the fuser unit.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
6	Replacing the low voltage PWB	The low voltage PWB is faulty.	Replace the low voltage PWB when the fuser heaters always turn on.	

### C6230: Broken fuser thermistor 1 error

Fuser thermistor 1 detected low temperature for 1.6s continuously

Step	Check description	Assumed cause	Measures	Reference
1	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• Fuser unit (fuser thermistor) - Exit PWB</li> <li>• Exit PWB - Main/engine PWB</li> </ul>	

Step	Check description	Assumed cause	Measures	Reference
3	Replacing the fuser unit	The normal temperature cannot be detected with the fuser heater not being turned on, broken fuser thermostat wire, etc.	Replace the fuser unit.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
6	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	

### C6250: Fuser thermistor 1 low temperature error

Fuser thermistor 1 detects a temperature lower than 100 °C / 212 °F for 1s in succession during ready or print

Step	Check description	Assumed cause	Measures	Reference
1	Checking the power supply voltage	The power supply voltage reduces.	Connect the power cord to a different wall outlet if the power supply voltage descends by 10% or more of the rated voltage, or multiple devices use the same outlet.	
2	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
3	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. <ul style="list-style-type: none"> <li>• Fuser unit (fuser thermistor) - Exit PWB</li> <li>• Exit PWB - Main/engine PWB</li> <li>• Low voltage PWB - Main/engine PWB</li> </ul>	
4	Replacing the fuser unit	The normal temperature cannot be detected with the fuser heater not being turned on, broken fuser thermostat wire, etc.	Replace the fuser unit.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	
7	Replacing the low voltage PWB	The low voltage PWB is faulty.	Replace the low voltage PWB when the fuser heaters always turn on.	

Step	Check description	Assumed cause	Measures	Reference
8	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	

### C6400: Zero-cross signal error

The zero-cross signal is not input for 1s continuously when the fuser heater turns on and the 24V broken wire is not detected.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Low voltage PWB - Main/engine PWB	
2	Replacing the low voltage PWB	The low voltage PWB is faulty.	Replace the low voltage PWB when the fuser heaters always turn on.	
3	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C6610: Press-release sensor error

The press-release sensor does not turn on or off after passing 30s from the start of the fuser compression or decompression.

Step	Check description	Assumed cause	Measures	Reference
1	Removing a piece of paper	The fuser thermistor cannot detect the normal temperature with paper strip	Remove a piece of paper remaining in the fuser unit.	
2	Checking the fuser pressure release operation	The fuser press-release does not operate properly.	Check if the pressure can be reduced by reverse-rotating the fuser gear	
3	Checking the press-release sensor	The press-release sensor is not properly attached.	Check if the press-release sensor is interrupted by the actuator during the decompression operation.	
4	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Press-release sensor - Exit PWB</li> <li>• Exit PWB - Main/engine PWB</li> <li>• Fuser motor - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
5	Checking the fuser motor	The fuser motor is not properly attached, or it is faulty.	Reattach the fuser motor. If it is not repaired, replace it.	
6	Replacing the fuser unit	The parts such as the press-release sensor in the fuser unit are faulty.	Replace the fuser unit.	
7	Replacing the exit PWB	The exit PWB is faulty.	Replace the exit PWB.	
8	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
9	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
10	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C6910: Engine firmware unexpected error

1. The drum motor drive continued for 60 min. or more while not printing.
2. The developer bias turns on while the main charger bias is off. (On for 3,263ms or more continuously)
3. The high voltage remote or main charger DC bias turns on while the drum motor is stopped. (On for 270ms or more continuously)
4. The periodic writing process to the EEPROM locked for 30s. (The EEPROM writing is not processed for 30s or other priority process occupies (locks) to have no process for the EEPROM.)

Step	Check description	Assumed cause	Measures	Reference
1	Reset the main power	The main power start-up is slow.	Turn the power switch off and unplug the power plug. After 5s, reconnect the power plug and turn the power switch on.	
2	Upgrade the firmware	The firmware is not the latest version.	Upgrade the engine firmware to the latest version.	
3	Check Main/Engine PWB	Main/Engine PWB is not attached and connected properly.	Fix Main/Engine PWB with screws and reconnect the connectors so that the ground is secured.	
4	Replace Main/Engine PWB	Main/Engine PWB is faulty.	Replace Main/Engine PWB.	

### C7001: Toner motor K error

The excess current signal was detected for 5s continuously

Step	Check description	Assumed cause	Measures	Reference
1	Replacing toner container K	The spiral locks up. (It does not rotate.)	Replace toner container K.	
2	Checking the driving parts	The drive gear or the coupling do not properly rotate or the excessive load is applied to them.	Clean the drive gears and the couplings in the toner motor unit and apply the grease to them.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Toner motor K - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
4	Checking toner motor K	Toner motor K is not properly attached, or it is faulty.	Reattach toner motor K. If it is not repaired, replace it.	
5	Replacing the toner motor unit	The toner motor unit is faulty.	Replace the toner motor unit.	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
8	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C7002: Toner motor C error

The excess current signal was detected for 5s continuously

Step	Check description	Assumed cause	Measures	Reference
1	Replacing toner container C	The spiral locks up. (It does not rotate.)	Replace toner container C.	
2	Checking the driving parts	The drive gear or the coupling do not properly rotate or the excessive load is applied to them.	Clean the drive gears and the couplings in the toner motor unit and apply the grease to them.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Toner motor C - Engine relay PWB • Engine relay PWB - Main/engine PWB	
4	Checking toner motor K	Toner motor C is not properly attached, or it is faulty.	Reattach toner motor C. If it is not repaired, replace it.	
5	Replacing the toner motor unit	The toner motor unit is faulty.	Replace the toner motor unit.	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
8	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	



### C7003: Toner motor M error

The excess current signal was detected for 5s continuously

Step	Check description	Assumed cause	Measures	Reference
1	Replacing toner container M	The spiral locks up. (It does not rotate.)	Replace toner container M.	
2	Checking the driving parts	The drive gear or the coupling do not properly rotate or the excessive load is applied to them.	Clean the drive gears and the couplings in the toner motor unit and apply the grease to them.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Toner motor M - Engine relay PWB • Engine relay PWB - Main/engine PWB	
4	Checking toner motor K	Toner motor M is not properly attached, or it is faulty.	Reattach toner motor M. If it is not repaired, replace it.	
5	Replacing the toner motor unit	The toner motor unit is faulty.	Replace the toner motor unit.	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
8	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C7004: Toner motor Y error

The excess current signal was detected for 5s continuously

Step	Check description	Assumed cause	Measures	Reference
1	Replacing toner container Y	The spiral locks up. (It does not rotate.)	Replace toner container Y.	
2	Checking the driving parts	The drive gear or the coupling do not properly rotate or the excessive load is applied to them.	Clean the drive gears and the couplings in the toner motor unit and apply the grease to them.	
3	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • Toner motor Y - Engine relay PWB • Engine relay PWB - Main/engine PWB	
4	Checking toner motor K	Toner motor Y is not properly attached, or it is faulty.	Reattach toner motor Y. If it is not repaired, replace it.	
5	Replacing the toner motor unit	The toner motor unit is faulty.	Replace the toner motor unit.	
6	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
7	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
8	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C7101: Toner sensor K error

The sensor output value is 0.1v and less or 3.2v or more during a certain time.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling toner container K	The toner container is not properly installed.	Reinstall toner container K.	
2	Replacing toner container K	The toner supply opening of the toner container cannot be opened by operating the lever.	Replace toner container K.	
3	Checking the driving parts	The drive gear or the coupling do not properly rotate or the excessive load is applied to them.	Clean the drive gear and the coupling and apply the grease to them.	
4	Correcting the toner supply opening	The toner supply opening on the primary transfer unit is not opened even when installing toner container K.	Correct the toner supply opening at the upper part of the primary transfer unit so that it is opened by the lever operation.	
5	Checking the primary transfer unit	Toner is clogged at the toner supply path in the primary transfer unit	Clean the inside of the primary transfer unit. If not resolved, replace it.	
6	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Developer unit K - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> <li>• Toner motor K - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
7	Replacing developer unit K	The gear or spiral does not rotate in the developer unit, or toner sensor K is faulty.	Replace developer unit K.	
8	Checking toner motor K	Toner motor K is not properly attached, or it is faulty.	Reattach toner motor K. If it is not repaired, replace it.	
9	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
10	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
11	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	

Step	Check description	Assumed cause	Measures	Reference
12	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7102: Toner sensor C error

The sensor output value is 0.1v and less or 3.2v or more during a certain time.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling toner container C	The toner container is not properly installed.	Reinstall toner container C.	
2	Replacing toner container C	The toner supply opening of the toner container cannot be opened by operating the lever.	Replace toner container C.	
3	Checking the driving parts	The drive gear or the coupling do not properly rotate or the excessive load is applied to them.	Clean the drive gear and the coupling and apply the grease to them.	
4	Correcting the toner supply opening	The toner supply opening on the primary transfer unit is not opened even when installing toner container C.	Correct the toner supply opening at the upper part of the primary transfer unit so that it is opened by the lever operation.	
5	Checking the primary transfer unit	Toner is clogged at the toner supply path in the primary transfer unit	Clean the inside of the primary transfer unit. If not resolved, replace it.	
6	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Developer unit C - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> <li>• Toner motor C - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
7	Replacing developer unit C	The gear or spiral does not rotate in the developer unit, or toner sensor C is faulty.	Replace the developer unit C.	
8	Checking toner motor C	Toner motor C is not properly attached, or it is faulty.	Reattach toner motor C. If it is not repaired, replace it.	

Step	Check description	Assumed cause	Measures	Reference
9	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
10	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
11	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
12	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7103: Toner sensor M error

The sensor output value is 0.1v and less or 3.2v or more during a certain time.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling toner container M	The toner container is not properly installed.	Reinstall toner container M.	
2	Replacing toner container M	The toner supply opening of the toner container cannot be opened by operating the lever.	Replace toner container M.	
3	Checking the driving parts	The drive gear or the coupling do not properly rotate or the excessive load is applied to them.	Clean the drive gear and the coupling and apply the grease to them.	
4	Correcting the toner supply opening	The toner supply opening on the primary transfer unit is not opened even when installing toner container M.	Correct the toner supply opening at the upper part of the primary transfer unit so that it is opened by the lever operation.	
5	Checking the primary transfer unit	Toner is clogged at the toner supply path in the primary transfer unit	Clean the inside of the primary transfer unit. If not resolved, replace it.	
6	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Developer unit M - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> <li>• Toner motor M - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	

Step	Check description	Assumed cause	Measures	Reference
7	Replacing developer unit M	The gear or spiral does not rotate in the developer unit, or toner sensor M is faulty.	Replace the developer unit M.	
8	Checking toner motor M	Toner motor M is not properly attached, or it is faulty.	Reattach toner motor M. If it is not repaired, replace it.	
9	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
10	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
11	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
12	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7104: Toner sensor Y error

The sensor output value is 0.1v and less or 3.2v or more during a certain time.

Step	Check description	Assumed cause	Measures	Reference
1	Reinstalling toner container Y	The toner container is not properly installed.	Reinstall toner container Y.	
2	Replacing toner container Y	The toner supply opening of the toner container cannot be opened by operating the lever.	Replace toner container Y.	
3	Checking the driving parts	The drive gear or the coupling do not properly rotate or the excessive load is applied to them.	Clean the drive gear and the coupling and apply the grease to them.	
4	Correcting the toner supply opening	The toner supply opening on the primary transfer unit is not opened even when installing toner container Y.	Correct the toner supply opening at the upper part of the primary transfer unit so that it is opened by the lever operation.	
5	Checking the primary transfer unit	Toner is clogged at the toner supply path in the primary transfer unit	Clean the inside of the primary transfer unit. If not resolved, replace it.	

Step	Check description	Assumed cause	Measures	Reference
6	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. <ul style="list-style-type: none"> <li>• Developer unit Y - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> <li>• Toner motor Y - Engine relay PWB</li> <li>• Engine relay PWB - Main/engine PWB</li> </ul>	
7	Replacing developer unit Y	The gear or spiral does not rotate in the developer unit, or toner sensor Y is faulty.	Replace the developer unit Y.	
8	Checking toner motor Y	Toner motor Y is not properly attached, or it is faulty.	Reattach toner motor Y. If it is not repaired, replace it.	
9	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
10	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	
11	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
12	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7200: Developer thermistor error

The sensor input sampling exceeds the reference value. (After detection, controlled at 25 °C / 77.0 °F)

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert developer unit K into the main unit all the way to reconnect the connector. Also, if the wire is faulty, replace it. • Developer unit K - Drum relay PWB • Drum relay PWB - Main/engine PWB	
2	Replacing developer unit K	Toner sensor K is faulty.	Replace developer unit K.	
3	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7221: LSU thermistor K error

The sensor input sampling exceeds the reference value. (After detection, controlled at 25 °C / 77.0 °F)

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(KM) (LSU thermistor K) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (KM).	
3	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	



### C7222: LSU thermistor C error

The sensor input sampling exceeds the reference value. (After detection, controlled at 25 °C / 77.0 °F)

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • LSU(CY) (LSU thermistor C) - Main/engine PWB	
2	LSU replacement	The LSU is faulty.	Replace the LSU (CY).	
3	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7401: Developer unit K type mismatch error

The main unit and developer unit K is not matched.

Step	Check description	Assumed cause	Measures	Reference
1	Checking developer unit K	The different type of the developer unit is installed.	Install the correct developer unit.	

### C7402: Developer unit C type mismatch error

The main unit and developer unit C is not matched.

Step	Check description	Assumed cause	Measures	Reference
1	Checking developer unit C	The different type of the developer unit is installed.	Install the correct developer unit.	

### C7403: Developer unit M type mismatch error

The main unit and developer unit M is not matched.

Step	Check description	Assumed cause	Measures	Reference
1	Checking developer unit M	The different type of the developer unit is installed.	Install the correct developer unit.	

### C7404: Developer unit Y type mismatch error

The main unit and developer unit Y is not matched.

Step	Check description	Assumed cause	Measures	Reference
1	Checking developer unit Y	The different type of the developer unit is installed.	Install the correct developer unit.	

### C7411: Drum unit K type mismatch error

The main unit and drum unit K is not matched.

Step	Check description	Assumed cause	Measures	Reference
1	Checking drum unit K	The different drum unit is installed.	Install the proper drum unit.	

### C7412: Drum unit C type mismatch error

The main unit and drum unit C is not matched.

Step	Check description	Assumed cause	Measures	Reference
1	Checking drum unit C	The different drum unit is installed.	Install the proper drum unit.	

### C7413: Drum unit M type mismatch error

The main unit and drum unit M is not matched.

Step	Check description	Assumed cause	Measures	Reference
1	Checking drum unit M	The different drum unit is installed.	Install the proper drum unit.	

### C7414: Drum unit Y type mismatch error

The main unit and drum unit Y is not matched.

Step	Check description	Assumed cause	Measures	Reference
1	Checking drum unit Y	The different drum unit is installed.	Install the proper drum unit.	

### C7601: ID sensor 1 error (Machine left side)

The measurement value of the ID sensor apply either of the following.

1. The P-wave of the light potential is lower than the p-wave of the dark potential +0.5V.
2. The S-wave of the light potential is lower than the S-wave of the dark potential.
3. The P/S-wave is more than 0.8V, or lower than 0.15V.

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning the ID sensors	ID sensor 1 is dirty.	Clean ID sensor 1 surface.	
2	Reattaching the ID sensor	ID sensor 1 is not properly attached.	Reattach ID sensor 1.	
3	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • ID sensor 1 - Main/engine PWB	

Step	Check description	Assumed cause	Measures	Reference
4	Replacing the ID sensor	ID sensor 1 is faulty, so the error is detected when executing Calibration.	Replace ID sensor 1.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7602: ID sensor 2 error (Machine right side)

The measurement value of the ID sensor apply either of the following.

1. The P-wave of the light potential is lower than the p-wave of the dark potential +0.5V.
2. The S-wave of the light potential is lower than the S-wave of the dark potential.
3. The P/S-wave is more than 0.8V, or lower than 0.15V.

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning the ID sensors	ID sensor 2 is dirty.	Clean ID sensor 2 surface.	
2	Reattaching the ID sensor	ID sensor 2 is not properly attached.	Reattach ID sensor 2.	
3	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • ID sensor 2 - Main/engine PWB	
4	Replacing the ID sensor	ID sensor 2 is faulty, so the error is detected when executing Calibration.	Replace ID sensor 2.	
5	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7611: Bias calibration read value error (Black)

The ID sensor cannot read the patch image density on the transfer belt normally when executing Calibration.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The ID sensor does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Cleaning the ID sensors	The ID sensor is dirty.	Clean the surface of ID sensor 1, 2.	
3	Reexecuting Calibration	Calibration failed last time.	Execute [Calibration] in [Menu] key > [Adjustment/Maintenance].	
4	Checking the ID sensor shutter	The ID sensor shutter is not opened.	Check if the ID sensor shutter opens and closes according to the paper tray opening and closing. If it does not open properly, repair it.	
5	Checking the primary transfer unit	The transfer belt surface is dirty or scratched	Clean the transfer belt surface. Or, replace the primary transfer unit.	
6	(When the image is too light) Checking the drum unit and developer unit	The drum unit or developer unit parts are dirty or worn down.	Clean drum unit K and developer unit K. If the parts are worn down, replace the unit.	
7	Reattaching the ID sensor	The ID sensor is not attached properly	Reattach ID sensor 1, 2.	
8	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • ID sensor 1, 2 - Main/engine PWB	
9	Replacing the ID sensor	ID sensor 1, 2 are abnormal and an error is detected when executing Calibration.	Replace ID sensor 1, 2.	
10	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
11	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C7612: Bias calibration read value error (Cyan)

The ID sensor cannot read the patch image density on the transfer belt normally when executing Calibration.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The ID sensor does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Cleaning the ID sensors	The ID sensor is dirty.	Clean the surface of ID sensor 1, 2.	
3	Reexecuting Calibration	Calibration failed last time.	Execute [Calibration] in [Menu] key > [Adjustment/Maintenance].	
4	Checking the ID sensor shutter	The ID sensor shutter is not opened.	Check if the ID sensor shutter opens and closes according to the paper tray opening and closing. If it does not open properly, repair it.	
5	Checking the primary transfer unit	The transfer belt surface is dirty or scratched	Clean the transfer belt surface. Or, replace the primary transfer unit.	
6	(When the image is too light) Checking the drum unit and developer unit	The drum unit or developer unit parts are dirty or worn down.	Clean drum unit C and developer unit C. If the parts are worn down, replace the unit.	
7	Reattaching the ID sensor	The ID sensor is not attached properly	Reattach ID sensor 1, 2.	
8	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • ID sensor 1, 2 - Main/engine PWB	
9	Replacing the ID sensor	ID sensor 1, 2 are abnormal and an error is detected when executing Calibration.	Replace ID sensor 1, 2.	
10	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
11	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7613: Bias calibration read value error (Magenta)

The ID sensor cannot read the patch image density on the transfer belt normally when executing Calibration.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The ID sensor does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Cleaning the ID sensors	The ID sensor is dirty.	Clean the surface of ID sensor 1, 2.	
3	Reexecuting Calibration	Calibration failed last time.	Execute [Calibration] in [Menu] key > [Adjustment/Maintenance].	
4	Checking the ID sensor shutter	The ID sensor shutter is not opened.	Check if the ID sensor shutter opens and closes according to the paper tray opening and closing. If it does not open properly, repair it.	
5	Checking the primary transfer unit	The transfer belt surface is dirty or scratched	Clean the transfer belt surface. Or, replace the primary transfer unit.	
6	(When the image is too light) Checking the drum unit and developer unit	The drum unit or developer unit parts are dirty or worn down.	Clean drum unit M and developer unit M. If the parts are worn down, replace the unit.	
7	Reattaching the ID sensor	The ID sensor is not attached properly	Reattach ID sensor 1, 2.	
8	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • ID sensor 1, 2 - Main/engine PWB	
9	Replacing the ID sensor	ID sensor 1, 2 are abnormal and an error is detected when executing Calibration.	Replace ID sensor 1, 2.	
10	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
11	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7614: Bias calibration read value error (Yellow)

The ID sensor cannot read the patch image density on the transfer belt normally when executing Calibration.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The ID sensor does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Cleaning the ID sensors	The ID sensor is dirty.	Clean the surface of ID sensor 1, 2.	
3	Reexecuting Calibration	Calibration failed last time.	Execute [Calibration] in [Menu] key > [Adjustment/Maintenance].	
4	Checking the ID sensor shutter	The ID sensor shutter is not opened.	Check if the ID sensor shutter opens and closes according to the paper tray opening and closing. If it does not open properly, repair it.	
5	Checking the primary transfer unit	The transfer belt surface is dirty or scratched	Clean the transfer belt surface. Or, replace the primary transfer unit.	
6	(When the image is too light) Checking the drum unit and developer unit	The drum unit or developer unit parts are dirty or worn down.	Clean drum unit Y and developer unit Y. If the parts are worn down, replace the unit.	
7	Reattaching the ID sensor	The ID sensor is not attached properly	Reattach ID sensor 1, 2.	
8	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • ID sensor 1, 2 - Main/engine PWB	
9	Replacing the ID sensor	ID sensor 1, 2 are abnormal and an error is detected when executing Calibration.	Replace ID sensor 1, 2.	
10	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
11	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## C7620: Automatic color registration failure

The image patch position on the transfer belt is outside the range of the ID sensor reading. The transfer belt surface is dirty or image patch density is light.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The ID sensor does not operate properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Cleaning the ID sensors	The ID sensor is dirty.	Clean the surface of ID sensor 1, 2.	
3	Reexecuting Calibration	Calibration failed last time.	Execute [Calibration] in [Menu] key > [Adjustment/Maintenance].	
4	Checking the ID sensor shutter	The ID sensor shutter is not opened.	Check if the ID sensor shutter opens and closes according to the paper tray opening and closing. If it does not open properly, repair it.	
5	Checking the primary transfer unit	The transfer belt surface is dirty or scratched	Clean the transfer belt surface. Or, replace the primary transfer unit.	
6	(When the image is too light) Checking the drum unit, developer unit and LSU	The parts for the drum unit, developer unit and LSU is dirty or worn out.	Clean drum unit Y, developer unit Y and the LSU. If the parts are worn down, replace the unit.	
7	(When the color shift occurs) Checking the LSU and the drum unit	The LSU or drum unit is not installed in the proper position. The LSU is faulty.	Reinstall the LSU and the drum unit. If it is not resolved, replace the LSU.	
8	Reattaching the ID sensor	The ID sensor is not attached properly	Reattach ID sensor 1, 2.	
8	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • ID sensor 1, 2 - Main/engine PWB	
9	Replacing the ID sensor	ID sensor 1, 2 are abnormal and an error is detected when executing Calibration.	Replace ID sensor 1, 2.	
10	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
11	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	



### C7800: Outer thermistor error

The sensor input sampling exceeds the reference value. (After detection, controlled at 25 °C / 77.0 °F)

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Outer temperature sensor - Main engine PWB	
2	Checking the outer temperature sensor	The outer temperature sensor is not properly attached, or it is faulty.	Reattach the outer temperature sensor. If it is not repaired, replace it.	
3	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
4	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7901: Drum unit EEPROM error (Black)

1. No response from the device is detected for 5ms or more 5 times continuously when reading / writing the data.
2. The reading data of 2 points mismatches 8 times continuously.
3. The reading data and the writing data mismatch 8 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM data in drum unit K is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert drum unit K into the main unit all the way to reconnect the connector. Also, if the wire is faulty, replace it. • Drum unit K - Drum relay PWB • Drum relay PWB - Main/engine PWB	
3	Replacing drum unit K	The EEPROM in drum unit K is faulty.	Replace drum unit K.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7902: Drum unit EEPROM error (Cyan)

1. No response from the device is detected for 5ms or more 5 times continuously when reading / writing the data.
2. The reading data of 2 points mismatches 8 times continuously.
3. The reading data and the writing data mismatch 8 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM data in drum unit C is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert drum unit C into the main unit all the way to reconnect the connector. Also, if the wire is faulty, replace it. <ul style="list-style-type: none"> <li>• Drum unit C - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> </ul>	
3	Replacing drum unit C	The EEPROM in drum unit C is faulty.	Replace drum unit C.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7903: Drum unit EEPROM error (Magenta)

1. No response from the device is detected for 5ms or more 5 times continuously when reading / writing the data.
2. The reading data of 2 points mismatches 8 times continuously.
3. The reading data and the writing data mismatch 8 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM data in drum unit M is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert drum unit M into the main unit all the way to reconnect the connector. Also, if the wire is faulty, replace it. <ul style="list-style-type: none"> <li>• Drum unit M - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> </ul>	
3	Replacing drum unit M	The EEPROM in drum unit M is faulty.	Replace drum unit M.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7904: Drum unit EEPROM error (Yellow)

1. No response from the device is detected for 5ms or more 5 times continuously when reading / writing the data.
2. The reading data of 2 points mismatches 8 times continuously.
3. The reading data and the writing data mismatch 8 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM data in drum unit Y is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert drum unit Y into the main unit all the way to reconnect the connector. Also, if the wire is faulty, replace it. <ul style="list-style-type: none"> <li>• Drum unit Y - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> </ul>	
3	Replacing drum unit Y	The EEPROM in drum unit Y is faulty.	Replace drum unit Y.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7911: Developer unit EEPROM error (Black)

1. No response from the device is detected for 5ms or more 5 times continuously when reading / writing the data.
2. The reading data of 2 points mismatches 8 times continuously.
3. The reading data and the writing data mismatch 8 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM data in developer unit K is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert developer unit K into the main unit all the way to reconnect the connector. Also, if the wire is faulty, replace it. <ul style="list-style-type: none"> <li>• Developer unit K - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> </ul>	
3	Replacing developer unit K	The EEPROM in developer unit K is faulty.	Replace developer unit K.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7912: Developer unit EEPROM error (Cyan)

1. No response from the device is detected for 5ms or more 5 times continuously when reading / writing the data.
2. The reading data of 2 points mismatches 8 times continuously.
3. The reading data and the writing data mismatch 8 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM data in developer unit C is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert developer unit C into the main unit all the way to reconnect the connector. Also, if the wire is faulty, replace it. <ul style="list-style-type: none"> <li>• Developer unit C - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> </ul>	
3	Replacing developer unit C	The EEPROM in developer unit C is faulty.	Replace the developer unit C.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7913: Developer unit EEPROM error (Magenta)

1. No response from the device is detected for 5ms or more 5 times continuously when reading / writing the data.
2. The reading data of 2 points mismatches 8 times continuously.
3. The reading data and the writing data mismatch 8 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM data in developer unit M is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert developer unit M into the main unit all the way to reconnect the connector. Also, if the wire is faulty, replace it. <ul style="list-style-type: none"> <li>• Developer unit M - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> </ul>	
3	Replacing developer unit M	The EEPROM in developer unit M is faulty.	Replace the developer unit M.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	

### C7914: Developer unit EEPROM error (Yellow)

1. No response from the device is detected for 5ms or more 5 times continuously when reading / writing the data.
2. The reading data of 2 points mismatches 8 times continuously.
3. The reading data and the writing data mismatch 8 times continuously.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The EEPROM data in developer unit Y is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Reinsert developer unit Y into the main unit all the way to reconnect the connector. Also, if the wire is faulty, replace it. <ul style="list-style-type: none"> <li>• Developer unit Y - Drum relay PWB</li> <li>• Drum relay PWB - Main/engine PWB</li> </ul>	
3	Replacing developer unit Y	The EEPROM in developer unit Y is faulty.	Replace the developer unit Y.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
5	Replacing the drum relay PWB	The drum relay PWB is faulty.	Replace the drum relay PWB.	
6	Main/engine PWB replacement	The main/engine PWB is faulty.	Replace the main/engine PWB.	



### C9540: Backup data error

When multiple parts are replaced at the same time, the internal data is changed and it interferes with the machine operation. Consequently, the main unit cannot recover.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the PWB	Multiple PWBs were replaced at the same time.	Recover to the original, if 2 or more of the following related parts were replaced at the same time. • Related parts: Memory, each PWB	
2	Checking the unit	Multiple units were replaced at the same time.	Be sure not to perform the following works at the same time when the memory or each PWB is replaced. • Replacing the drum unit or the developer unit	

## (2) System Error (Fxxxx) Outline

Error code	Contents
F000	Communication error between the main/engine PWB and the operation panel PWB
F010	Program ready error
F020	RAM checksum error
F040	Communication error between the controller and the print engine
F050	Print engine main program error

### Content of System Error (Fxxxx) Outline

#### F000 : Communication error between the main/engine PWB and the operation panel PWB

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The communication is faulty between the main/engine PWB and the operation panel PWB.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Main/engine PWB - Operation panel PWB	
3	Executing U021	The backup RAM data is faulty.	Execute U021 to initialize the backup RAM data.	
4	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	
5	Replacing the operation panel PWB	The operation panel PWB is faulty.	Replace the operation panel PWB.	

**F010 : Program ready error**

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The checksum in the main/engine PWB is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

**F020 : RAM checksum error**

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The checksum in the main/engine PWB is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### F040 : Communication error between the controller and the print engine

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	The communication between the controller and the print engine is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
2	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

### F050 : Print engine main program error

Step	Check description	Assumed cause	Measures	Reference
1	Firmware upgrade	The firmware is not the latest version.	Upgrade the engine firmware to the latest version	
2	Resetting the main power	The print engine ROM checksum is faulty.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
3	Reinstalling the EEPROM	The EEPROM is not properly attached.	Reattach the EEPROM on the main/engine PWB.	
4	Checking the main/engine PWB	The connector and FFC are not connected properly or the wire, FFC or PWB is faulty.	Clean the terminal of the connectors on the main/engine PWB, reconnect the connector of the wire, and reconnect the FFC terminal. If the wire or the FFC is faulty, repair or replace them. If not resolved, replace the main/engine PWB.	

## (2-1) System Error (Fxxxx) Outline

The document is described for the outline of the factors of the Fxxx errors that are not described in the self-diagnosis error code list.

Please utilize it as the measures when the system is not recovered after power off/on or it frequently occurs.

\*: Power is partially supplied to this machine when the power is turned off.

Unplug the power plug and check if the F-code error is not released when passing one minute or more after turning the power off and then on.

\*: Please initially check the following when the error (Fxxx) is indicated.

- Check the DIMM (DDR memory) and neighboring parts: Check the contact on the control PWB by releasing and reinserting the DIMM.

If the error repeats after that, replace the DIMM.

Code	Content	Check procedure & check point	Remark (Common)
-	<b>Lock-up at Welcome display (TASKalfa/Ecosys) (The display unchanges after a certain time (Note))</b>	<ol style="list-style-type: none"> <li>1. Check the wire or connector between Operation panel PWB and Main/engine PWB and correct it if necessary. (Reconnect the connector or replace the wire) Check the operation after that.</li> <li>2. Execute U021 (Init memory) and check function.</li> <li>3. Replace the operation panel PWB and check function.</li> <li>4. Replace the main/engine PWB and check function.</li> <li>5. Retrieve the USBLOG and contact the Service Administrative Division.</li> </ol>	Note: 60 sec
<b>F000</b>	<b>F000 appears in a certain time (Note) after the Welcome display continues</b>  <b>Operation panel- Main board communication error</b>	<ol style="list-style-type: none"> <li>1. Check the wire or connector between Operation panel PWB and Main/engine PWB and correct it if necessary. (Reconnect the connector or replace the wire) Check the operation after that.</li> <li>2. Execute U021 (Init memory) and check function.</li> <li>3. Replace the operation panel PWB and check function.</li> <li>4. Replace the main/engine PWB and check function.</li> <li>5. Retrieve the USBLOG and contact the Service Administrative Division.</li> </ol>	
<b>F15X</b>	<b>An error is detected at the authentication device control section</b>	<ol style="list-style-type: none"> <li>1. Check the wire or connector between the authentication device and Main/engine PWB and correct it if necessary. (Reconnect the connector or replace the wire) Check the operation after that.</li> <li>2. Execute U021 (Init memory) and check function.</li> <li>3. Replace the main/engine PWB and check function.</li> <li>4. Retrieve the USBLOG and contact the Service Administrative Division.</li> </ol>	Authentication device: Card Reader, etc.
<b>F17X</b>	<b>An error is detected at the print data control section</b>	<ol style="list-style-type: none"> <li>1. Execute U021 (Init memory) and check function.</li> <li>2. Replace the main/engine PWB and check function.</li> <li>3. Retrieve the USBLOG and contact the Service Administrative Division.</li> </ol>	

Code	Content	Check procedure & check point	Remark (Common)
F18X	An error is detected at the Video control section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	
F1DX	An error is detected at the Image memory management section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	* Poor arrangement of F1D4:Random Access Memory (1) Confirmation of U340 (2) Initialization of a set point (U021)
F21X F22X F23X	An error is detected at the Image processing section	1. Check contact of the DIMM by releasing and reinserting, and check the function. Replace DIMM if available, and check function. 2. Execute U021 (Init memory) and check function. 3. Replace the main/engine PWB and check function. 4. Retrieve the USBLOG and contact the Service Administrative Division.	
F24X	An error is detected at the System management section	1. Check contact of the DIMM by releasing and reinserting, and check the function. Replace DIMM if available, and check function.??? 2. Execute U021 (Init memory) and check function. 3. Replace the main/engine PWB and check function. 4. Retrieve the USBLOG and contact the Service Administrative Division.	F248 error is printer process error. If it repeats with a certain print data, retrieve the capture data and USBLOG.
F25X	Abnormality detecting in a network management department	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	[Main body to External network] Ethernet connector
F26X F27X F28X F29X F2AX	An error is detected at the System management section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	
F2BX F2CX F2DX F2EX F2FX F30X F31X F32X	Abnormality detecting in a network control part	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	[Main body to External network] Ethernet connector

Code	Content	Check procedure & check point	Remark (Common)
F35X	An error is detected at the Print control section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	
F38X	An error is detected at the Authentication/permit management section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	
F3AX F3BX F3CX F3DX F3EX F3FX F40X F41X F43X F44X F45X	An error is detected at the Entity control section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	
F46X	An error is detected at the Print image process section	1. Replace the main/engine PWB and check function. 2. Retrieve the USBLOG and contact the Service Administrative Division. (or retrieve the print capture data by case)	F46F error is printer process error. If it repeats with a certain print data, retrieve the capture data and USBLOG.
F48X	An error is detected at the Image edit process control section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	
F4DX	An error is detected at the Entity control section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	
F4FX	An error is detected at the Job control section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it
F52X F53X F55X F56X F57X	An error is detected at the Job control section	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it

Code	Content	Check procedure & check point	Remark (Common)
F63X	<b>An error is detected at the Device control section</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it
F68X	<b>An error is detected at the Storage device control section</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it
F90X	<b>Abnormality detecting in the extension application service part</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it
F93X	<b>Abnormality detecting in the extension application management part</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it
F9FX	<b>Abnormality detecting in the extension application various service part</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it
FC0X	<b>Abnormality detecting in system application</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it
FCAX	<b>Abnormality detecting in Print application</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it
FD4X	<b>Abnormality detecting in Box application</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it
FDEX	<b>Abnormality detecting in maintenance application</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	The USB log is necessary for analysis. Please cooperate in retrieving it



<b>Code</b>	<b>Content</b>	<b>Check procedure &amp; check point</b>	<b>Remark (Common)</b>
<b>FF7X</b>	<b>Abnormality detecting in a report creation part</b>	1. Execute U021 (Init memory) and check function. 2. Replace the main/engine PWB and check function. 3. Retrieve the USBLOG and contact the Service Administrative Division.	[Controller fail- ure] Only turn off/on the power to solve the problem. It is necessary to provide USBLOG for the investigation.

## 7-4 Print Errors

No.	Contents	Condition
(1)	The paper loading message appears	
(2)	The data is output with color from Excel even if the monochrome mode is set	
(3)	Color tone of the printed photo is different	The settings of Imaging / PDL are incorrect.
(4)	Orientation is different	
(5)	Paper is fed from the MP tray	The main unit MP tray setting is wrong
(6)	Garbled characters	The printer driver was not properly installed.
(7)	Data is output in monochrome	Photos printed from a PC are monochrome instead of color. (Print from Windows Photo Viewer)
(8)	Paper is not fed from the MP tray	The media types of each paper source defined in the printer driver and the main unit are mismatched.
(9)	The same data is printed out endlessly	A PC (spooler) does not properly operate.
(10)	PC window shows [Print job error], [Standby] or [Printer unavailable] is indicated on the printer properties	The main unit is not ready to print
(11)	Processing and Memory lamps are lit while the printer standby message is indicated	The main unit locks up.
(12)	Unable to output at sleep mode due to the start-up failure of the machine. ([Processing] or [Memory] lamp turns on the operation panel.)	The main unit locks up.
(13)	Print stops after printing few sheets (operation lock). ([Processing] or [Memory] lamp turns on the operation panel.)	The image processing fails due to the insufficient memory, so the main unit locks up.
(14)	Print out is not available from the network factor (1)	The network has some troubles or the network setting is incorrect.
(15)	Print out is not available from the network factor (2)	The cable between the main unit and the PC is not properly connected.
(16)	Print out is not available from the network factor (3)	The access point (router or hub) in the network does not operate properly.
(17)	Print out is not available from the network factor (4)	The router is faulty, or the router settings are incorrect.
(18)	Print out is not available from the network factor (5)	'Offline' appears and the print function is unavailable.
(19)	Print out is not available from the network factor (6)	Only one among installed PCs is unable to print. No error is displayed and if directing print, it is on hold.

No.	Contents	Condition
(20)	Print out is not available from the network factor (7)	The main unit IP address is changed.
(21)	Print out is not available from the printer driver setting factor (1)	[Not connected] is displayed on PC and print job can't be performed due to the error. (Can't print)
(22)	Print out is not available from the printer driver setting factor (2)	'Please wait' is displayed at the main unit. The Job is retained without outputting printed materials.
(23)	Print out is not available from the printer driver setting factor (3)	A PC does not recognize the main unit.
(24)	Print out is not available from the printer driver setting factor (4)	PC operation does not stabilize.
(25)	Print out is not available from the printer driver setting factor (5)	Check if the issue occurs when printing the data from all PCs in the network or from a certain PC. Then, print out the data from another PC if it occurs at a certain PC.
(26)	Print out is not available from the printer driver setting factor (6)	The incorrect printer driver was selected.
(27)	Print out is not available from the printer driver setting factor (7)	Installed printer driver shows 'Deleting' and it remains when reinstalling it
(28)	A part of the image is missing	The image data processing with a certain application (Excel, PDF) is faulty.
(29)	Paper Mismatch Error' appears	The paper size is not detected properly.

## Content of Print Errors

### (1) The paper loading message appears

Step	Check description	Assumed cause	Measures	Reference
1	Changing paper	The size of the loaded paper did not match the paper size set in the printer properties.	Load the paper of the paper size defined at "Paper size" in the [Basic] tab in the print settings at the PC to the cassette.	
2	Checking the paper size	The paper size on the operation panel and the one set for the paper source do not match.	Check if the paper size on the operation panel and the one set for the paper source do not match	
3	Relocating the paper width guides or the MP paper width guides	The locations of the paper width guides or the MP paper width guides do not match the paper size.	Relocate the paper width guides or the MP paper width guides to match the paper size.	
4	Checking the actuator and the spring	The actuator or the spring for paper sensor does not operate properly.	Reattach the actuator and the spring for the paper sensor. If not repaired, replace them.	

Step	Check description	Assumed cause	Measures	Reference
5	Checking the situation	The print data created by a certain application (Word, etc.) is faulty.	Check if the print data generated by other than a certain application (Word, etc.) is output properly. If the phenomenon occurs with the application only, change the application setting.	
6	Changing the settings	Orientation is not properly set in the print page setting on a certain application (Word, etc.).	Check the orientation with preview before printing and reset the orientation at the print setting on a certain application (Word, etc.).	
7	Checking the settings	The paper size and the media type detected at the main unit did not match with the paper size and the media type set in the printer driver.	Check if the paper size detected on the MP tray and the media type of the MP tray set via the System Menu (for the main unit) matched to the paper size and the media type at [Imaging] > [Basic] in the printer properties at the PC.	
8	Changing the settings	The MP tray setting does not match between the main unit and printer driver	Select 'MP tray' at [Source] in the [Basic] tab in the print settings at the PC.	

## (2) The data is output with color from Excel even if the monochrome mode is set

Step	Check description	Assumed cause	Measures	Reference
1	Changing the settings	Excel is not properly set up.	Select 'Black & White' at [Color Mode] in the [Imaging] tab in the print settings at the PC. Next, overwrite the Excel data and close the window. And then, restart it up.	

## (3) Color tone of the printed photo is different

The settings of Imaging / PDL are incorrect.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the situation	A file created on a certain application makes error.	When the phenomenon occurs with a certain file only, check if there is an abnormality in the image data.	

Step	Check description	Assumed cause	Measures	Reference
2	Changing the settings	Print quality is not properly set up.	Select 'Quality priority' at [Color conversion] in the [Imaging] tab in the print settings at the PC.	
3	Checking the situation	The print settings of Page-Maker or Illustrator, etc. are incorrect.	Check if the phenomenon occurs with the file generated by a certain application such as PageMaker or Illustrator, and refer to Help display.	
4	Changing the settings	The PDL settings or the imaging settings of [Basic] are incorrect.	Change [PDL Settings] from [PCL XL] to [KPD] in the print settings at the PC and change [Color reproduction] at the [Imaging] tab.	
5	Changing the settings	PDL or Color conversion processing is not properly set.	Change [PDL Settings] from [PCL XL] to [KPD] in the print settings at the PC and select 'Quality priority' at [Color conversion] in the [Imaging] tab. (When the image data is CMYK, not RGB.)	
6	Replacing the paper	Paper quality causes the phenomenon.	Replace with smooth paper.	
7	Executing Calibration	Calibration is not executed properly	Execute [Calibration] in [Menu] key > [Adjustment/Maintenance].	
8	Changing the settings	The settings in the [Imaging] tab in the print settings at the PC are incorrect.	Select 'Text and Photos' at [Color reproduction] in the [Imaging] tab in the print settings at the PC.	

#### (4) Orientation is different

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper size	Paper same as the output size is not set in the paper source.	Check on the operation panel if paper of the same size as the output paper size selected on the printer driver is set. ([Status/Job Cancel] key > [Paper status]). If not, set paper in any of the drawer and specify the paper source.	

Step	Check description	Assumed cause	Measures	Reference
2	(When feeding from MP tray) Resetting the MP paper width guides	Paper is not properly set at the MP tray.	Pull out the sub tray from the MP tray and set the MP paper width guide match to the paper width and after that, confirm if the paper size displays on the operation panel properly. ([Status/Job Cancel] key > [Paper status]). Paper size is not displayed properly, reset the MP paper width guide. If displays properly, move to the next step [Change settings]	
3	Changing the settings	The printer driver is not set correctly.	Set [Orientation] properly at the [Basic setting] of the printer driver.	
4	Reinstalling the printer driver	The printer driver was not properly installed.	Uninstall and reinstall the printer driver.	
5	Changing the settings	The print setting at the application software side has the priority.	Set the print setting at the application software side properly.	

### (5) Paper is fed from the MP tray

The main unit MP tray setting is wrong

Step	Check description	Assumed cause	Measures	Reference
1	Changing the settings	The Auto Cassette Change is [On].	To prevent paper from feeding in case no paper is available in cassette which is selected, change [Auto Cassette Switching] to [Off]. ([Menu] key > [Printer] > [Auto Cass.cange] > [Off].)	
2	Changing the settings	'Media type' in the [Basic] tab in the print settings at the PC differs from the media type of the cassette that is set in the main unit.	Check the media type set on the main unit cassette and MP tray and set the media type for the main unit in the [Basic] tab in the print settings at the PC.	
3	Changing the settings	The same media type is set between the main unit cassette and MP tray	Set different media types between the main unit cassette and MP tray	

## (6) Garbled characters

The printer driver was not properly installed.

Step	Check description	Assumed cause	Measures	Reference
1	Resetting the main power	There is a communication error.	Confirm there are no jobs in process in the PC and the main unit. Then, turn off the power switch and unplug the power cord. After 5s later, reconnect the power cord and turn on the power switch.	
2	Checking the font list	Font for special data is not resident.	After checking output from Excel and Word is normal, print the font list to check if a font for special data is resident.	
3	Selecting the bitmap font	The bitmap font (default setting) is unselected.	Select the bitmap font (default setting) and print the data.	
4	Reinstalling the printer driver	The printer driver is faulty.	Uninstall the printer driver and reinstall the latest version	

## (7) Data is output in monochrome

Photos printed from a PC are monochrome instead of color. (Print from Windows Photo Viewer)

Step	Check description	Assumed cause	Measures	Reference
1	Changing the settings	The [Color Mode] setting in the [Imaging] tab in the print settings at the PC is incorrect.	Check the color mode in the [Imaging tab] in the print settings at the PC and change to 'Full color' if the color mode was set to 'Black'.	
2	Changing the settings	The option or printer properties are not properly set up	Change the color mode to 'Full Color' at the page settings of the unique application or Excel.	
3	Changing the printing method	The application is incompatible.	Directly print JPEG data instead of pasting it on Excel.	

### (8) Paper is not fed from the MP tray

The media types of each paper source defined in the printer driver and the main unit are mismatched.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the settings	The paper size and the media type detected at the main unit did not match with the paper size and the media type set in the printer driver.	Check if the paper size detected on the MP tray and the media type of the MP tray set via the System Menu (for the main unit) matched to the paper size and the media type at [Imaging] > [Basic] in the printer properties at the PC.	
2	Changing the settings	The MP tray setting does not match between the main unit and printer driver	Select 'MP tray' at [Source] in the [Basic] tab in the print settings at the PC.	

### (9) The same data is printed out endlessly

A PC (spooler) does not properly operate.

Step	Check description	Assumed cause	Measures	Reference
1	Deleting the job	The generated data is faulty.	Delete the print job spooled in the PC and print it out again.	

### (10) PC window shows [Print job error], [Standby] or [Printer unavailable] is indicated on the printer properties

The main unit is not ready to print

Step	Check description	Assumed cause	Measures	Reference
1	Clearing the error	The main unit is not ready to print	Check if the error appears on the operation panel or the error lamp blinks. Then if there is, cancel it.	
2	Checking the main unit	The main unit is not ready to print	Resolve the problem at the main unit if any	



**(11) Processing and Memory lamps are lit while the printer standby message is indicated**

The main unit locks up.

Step	Check description	Assumed cause	Measures	Reference
1	Clearing the error	The main unit is not ready to print	After confirming no error is indicated on the main unit's operation panel, cancel all PC print jobs. Then, turn off the power switch and unplug the power cord. After passing 5s, reconnect the power cord and turn on the power switch.	

**(12) Unable to output at sleep mode due to the start-up failure of the machine.**

**([Processing] or [Memory] lamp turns on the operation panel.)**

The main unit locks up.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the firmware	The firmware is not the latest version.	Upgrade the firmware to the latest version.	
2	Changing the settings	The sleep level is not set to Quick Recovery mode.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch. Then, set [Quick Recovery] in the Sleep Level setting.	

**(13) Print stops after printing few sheets (operation lock).**

**([Processing] or [Memory] lamp turns on the operation panel.)**

The image processing fails due to the insufficient memory, so the main unit locks up.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the situation	The data processing in a certain PC is faulty.	Check if the issue occurs when printing the data from all PCs in the network or from a certain PC. Then, print out the data from another PC if it occurs at a certain PC.	
2	Changing the settings	The application is not properly set.	Check if a problem occurring from a certain application and file (big data like CAD data) and change application setting and refer to application's help.	

Step	Check description	Assumed cause	Measures	Reference
3	Firmware upgrade	The firmware is not the latest version.	Upgrade the main firmware to the latest version.	
4	Deleting the job	Processing fails.	Cancel the job in process and reprint in the main unit job status	
5	Resetting the main power	The main unit locks up.	If the operation panel or the buttons are not active, turn off the power switch and unplug the power cord. After passing 5s, reconnect the power cord and turn on the power switch.	

### (14)Print out is not available from the network factor (1)

The network has some troubles or the network setting is incorrect.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the network	There is trouble in the network.	Check if the memory LED on the operation panel of the main unit is blinking after printing out from the PC. If not blinking, cancel the processing job and reprint out.	
2	Checking the network	There is trouble in the network.	When the printing error appears on the operation panel or the PC screen, clear the error caused by the toner or paper jam, etc.	
3	Checking the network	There is trouble in the network.	Check the main unit IP Address in the status page, etc. and then check if Command Center can be opened using that IP Address. If not, reconfigure the network again.	
4	Checking the network	There is trouble in the network.	Check the internet connection and restore the network connection if necessary	
5	Checking the network	There is trouble in the network.	Check the cable and reset the router or HUB.	
6	Restarting up	The PC or the main unit locks up.	Restart the PC or the main unit, and print out again.	

### (15)Print out is not available from the network factor (2)

The cable between the main unit and the PC is not properly connected.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The cable between the main unit and the PC is not properly connected.	Check the cable connection between the main unit and the PC.	
2	Restarting up	The main unit or the PC does not properly start up.	Restart the main unit and then restart the PC.	
3	Replacing the Ethernet cable	The Ethernet cable is faulty.	Replace the Ethernet cable.	
4	Changing the connection	Another network is faulty.	Directly connect the main unit to the PC with the cross cable and then check if the same data can be printed out.	

### (16)Print out is not available from the network factor (3)

The access point (router or hub) in the network does not operate properly.

Step	Check description	Assumed cause	Measures	Reference
1	Restarting up	The router or the hub does not properly activate.	Check if the link lamp of the router or hub (concentrator) turns on and restart it.	
2	Checking the Ethernet cable	The Ethernet cable is not properly connected.	In case the link lamp is off, once disconnect the Ethernet cable from the router and reconnect it to check the link lamp is lit.	
3	Checking the Ethernet cable	The Ethernet cable is faulty.	Replace the Ethernet cable.	
4	Restarting up	The router, hub, PC or main unit does not start up normally	In case of no connection while the link lamp is lit, restart the router or hub and then restart up the PC and the main unit	

### (17)Print out is not available from the network factor (4)

The router is faulty, or the router settings are incorrect.

Step	Check description	Assumed cause	Measures	Reference
1	Changing the settings	The IP address is not properly set.	Check if the main unit IP Address indicated in the status page is the same as the IP Address in the [Port] tab of [Printer Properties] at the PC. If not, correct the IP address at the PC	

Step	Check description	Assumed cause	Measures	Reference
2	Changing the settings	The printer host name is not properly set.	Check the printer host name by printing out the status report when there is a server environment. Then, check the printer host name at the [Port] tab in the printer properties at a PC. If they differ, correct the printer host name.	

### (18)Print out is not available from the network factor (5)

'Offline' appears and the print function is unavailable.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the network	There is trouble in the network.	Check the internet connection and restore the network connection if necessary	
2	Restarting up	The PC malfunctions.	When 'Offline' appears on the printer driver, check if it is used in the pause or offline. Then, restart up the PC.	
3	Changing the settings	The application is not properly set.	Check if the other Excel / Word data can be output and change the setting of the application.	
4	Correcting the IP address	The IP address is not properly set.	Check if the main unit IP Address indicated in the status page is the same as the IP Address in the [Port] tab of [Printer Properties] at the PC. If not, correct the IP address at the PC	
5	Reconfiguring the IP address	The IP address is not properly set.	Check if communication via command center or PING is available with IP address set up. Set up IP address again and restart the main unit if necessary.	
6	Changing the settings	The port settings in the printer properties at the PC are incorrect.	Remove the checks at the dual-directional support and the SNMP status in the [Port] tab of the printer properties in a PC. Then, restart up the main unit and the PC.	
7	Restarting up	The main unit does not start up properly.	After the printer is ready, check if the test sheet can be output and restart the main unit.	

**(19)Print out is not available from the network factor (6)**

[Condition]

**PC OS: Windows 7**

**Printing file: Kyocera test page**

**Connection method: Wireless LAN**

Only one among installed PCs is unable to print. No error is displayed and if directing print, it is on hold.

Step	Check description	Assumed cause	Measures	Reference
1	Restarting up	The main unit or the PC does not properly start up.	Restart up the main unit or the PC.	
2	Checking the cable	The cable is not properly connected.	Check the cable connection (Check if the network connection is available.)	
3	Correcting the IP address	The IP address is not properly set.	Check if the ID address is properly set, and correct it if incorrect.	
4	Checking the network	There is trouble in the network.	Check if access via command center or PING is available and then check the hub or router.	
5	Changing the settings	The printer port IP address, the SNMP of the printer driver, or the bi-directional support is not properly set.	Correct the IP address and remove the checks at the SNMP status and the dual-directional support in the [Port] tab of the printer properties at a PC. Then, restart up the main unit and the PC.	
6	Uninstalling the security software or setting the exception	The restriction of the security software causes the phenomenon.	Check if the printer is available by uninstalling the security software. Or, set the exception setting.	

**(20)Print out is not available from the network factor (7)**

The main unit IP address is changed.

Step	Check description	Assumed cause	Measures	Reference
1	Restarting up	There is trouble in the network.	Check if a problem occurs with output from all PCs on the network and restart up hub or router.	
2	Checking the connection	The connector of the cable is not connected properly	Check if there is problem with the cable connection on the network.	

Step	Check description	Assumed cause	Measures	Reference
3	Restarting the main unit	The main unit does not start up properly.	Turn off the power switch and pull out the power plug. After passing 5s, reinsert the power plug and turn on the power switch.	
4	Correcting the IP address	IP address was changed.	Check if the main unit IP Address indicated in the status page is the same as the IP Address in the [Port] tab of [Printer Properties] at the PC. If not, correct the IP address at the PC	
5	Changing the settings	The static IP Address is not set in the System Menu	Set the static IP Address in the System Menu	

**(21)Print out is not available from the printer driver setting factor (1)**

**[Condition]**

**PC OS: Windows 7**

**Printing file: Kyocera test page**

**Connection method: Wireless LAN**

[Not connected] is displayed on PC and print job can't be performed due to the error. (Can't print)

Step	Check description	Assumed cause	Measures	Reference
1	Deleting the job	The faulty print job is remaining.	Check if the print job remains in the printer driver and delete the remaining.	

**(22)Print out is not available from the printer driver setting factor (2)**

**[Condition]**

**PC OS: Windows 7**

**Printing file: Kyocera test page**

**Connection method: Wireless LAN**

'Please wait' is displayed at the main unit. The Job is retained without outputting printed materials.

Step	Check description	Assumed cause	Measures	Reference
1	Deleting the job	The faulty print job is remaining.	Check if the print job remains in the printer driver and delete the remaining.	

### (23)Print out is not available from the printer driver setting factor (3)

A PC does not recognize the main unit.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the settings	The printer driver is not properly set.	Check if the printer icon of PC is [Ready]. (Right click the printer icon and execute the trouble shooting)	
2	Reinstalling the printer driver	The printer driver is faulty.	Uninstall the printer driver and reinstall the latest version	
3	Restarting the PC	The PC does not start up properly.	Restart up the PC.	

### (24)Print out is not available from the printer driver setting factor (4)

PC operation does not stabilize.

Step	Check description	Assumed cause	Measures	Reference
1	Restarting the PC	The printer driver is not properly set.	Restart PC. (In case if many application software are running or the free space of the PC memory /HDD is low)	

### (25)Print out is not available from the printer driver setting factor (5)

Check if the issue occurs when printing the data from all PCs in the network or from a certain PC. Then, print out the data from another PC if it occurs at a certain PC.

Step	Check description	Assumed cause	Measures	Reference
1	Correcting the IP address	The IP address is not properly set.	Check if the IP Address indicated in the main unit status report and system menu is same as the IP address in the port setting of [Printer Properties] at the PC. If not, correct the IP address at the port setting	

### (26)Print out is not available from the printer driver setting factor (6)

The incorrect printer driver was selected.

Step	Check description	Assumed cause	Measures	Reference
1	Installing the printer driver	The incorrect printer driver is selected.	Select the correct printer driver. If it is not in the PC, install the printer driver for the destination unit in the PC.	

### (27)Print out is not available from the printer driver setting factor (7)

Installed printer driver shows 'Deleting' and it remains when reinstalling it

Step	Check description	Assumed cause	Measures	Reference
1	Deleting the job	The print jobs remain in the spool inside the printer driver.	Delete all print jobs spooling inside the printer driver.	
2	Uninstalling the printer driver	There is the unused printer driver.	Delete the unused printer driver.	
3	Restarting the print	The system is pausing.	Right click the pausing printer icon and select [Print resuming]. Then, check the ready port.	
4	Checking the settings	The host name or the IP address is not properly set.	When the main unit connects to a local network, check the host name and the IP address on the status report of the main unit.	
5	Adding the Standard TCP/IP port	There is no main unit IP Address in the Standard TCP/IP Port	Add the main unit IP address in Standard TCP/IP port and print Test Page	

### (28)A part of the image is missing

The image data processing with a certain application (Excel, PDF) is faulty.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the application	The image data processing with a certain application (Excel, PDF, etc.) is faulty.	When the phenomenon occurs with a certain file only, check if there is an abnormality in the image data.	
2	Checking the application	The data processing with a certain application (Excel, PDF, etc.) is faulty.	Check if the image does not drop out on the print preview, and refer to the Help in the application if necessary.	
3	Changing the settings	The PDL settings is incorrect.	Select 'GDI compatible mode' at [PDL settings] in the print settings at the PC.	
4	Firmware upgrade	The firmware is not the latest version.	Upgrade the main firmware to the latest version.	



**(29)Paper Mismatch Error' appears**

**Condition: MP tray feed start**

The paper size is not detected properly.

Step	Check description	Assumed cause	Measures	Reference
1	Changing the settings	The paper size for the MP tray is not properly set.	Adjust the MP tray paper size	
2	Resetting the MP paper width guides	The locations of the MP paper width guides do not match the paper size.	Reset the MP paper width guides to match the paper size.	
3	Changing the settings	Paper Mismatch Error is set to [Ignore].	Set [Ignore] at [Common Settings] > [Error Handlings] > [Paper Mismatch Error] via the System Menu.	

## 7-5 Error Messages

No.	Contents
(1)	The cover-open message appears even if closing the rear cover (pressing the interlock switch)
(2)	Paper add message appears while loading paper on the MP tray

### Content of Error Messages

#### (1) The cover-open message appears even if closing the rear cover (pressing the interlock switch)

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector is not properly connected or the wire is faulty.	Clean the terminal of the following wire connectors and reconnect the connectors. If there is no continuity, replace the wire. • Interlock switch - Low voltage PWB	
2	Replacing the interlock switch	The interlock switch is faulty.	Replace the interlock switch.	

#### (2) Paper add message appears while loading paper on the MP tray

Step	Check description	Assumed cause	Measures	Reference
1	Checking the connection	The connector or FFC is not connected properly. Or, the wire or FFC is faulty.	Reconnect the following wire connectors and clean the FFC and reconnect. If there is no continuity, replace the wire. If the FFC terminal section is deformed or FFC is broken, replace the FFC. • MP paper sensor - Engine relay PWB • Engine relay PWB - Main/engine PWB	
2	Replacing the actuator	The actuator is deformed.	Replace the MP paper sensor actuator.	
3	Replacing the MP paper sensor	The MP paper sensor is not properly attached or it is faulty.	Reattach the MP paper sensor. If it is not repaired, replace it.	
4	Replacing the engine relay PWB	The engine relay PWB is faulty.	Replace the engine relay PWB.	

<b>Step</b>	<b>Check description</b>	<b>Assumed cause</b>	<b>Measures</b>	<b>Reference</b>
5	Replacing the main/engine PWB	The main/engine PWB is faulty.	Replace the main/engine PWB.	

## 7-6 Abnormal Noise

No.	Contents	Condition
(1)	Abnormal noise (Basic measures)	
(2)	Abnormal sounds from the paper conveying section	Frictional wear, smudges / foreign objects adhesion on the conveying rollers, pulleys and the gears
(3)	Abnormal sound from the developer section	Caused by the developer unit.
(4)	Abnormal sound from the exit section	Smudges / foreign objects adhesion in the exit section
(5)	Abnormal sound from the primary paper feed section	Frictional wear, smudges / foreign objects adhesion, attachment failure of the primary paper feed section
(6)	Abnormal sound from the machine front side	Wear, dirtiness, foreign objects adhesion or attachment failure at the MP feed section
(7)	Abnormal sound from the lower side than the fuser exit section	Rubbing sound between the bushing and the stop ring of the fuser exit roller due to the smudges / foreign objects adhesion
(8)	Abnormal sound from the upper side of the fuser exit section	Rubbing sound between the fuser exit pulley and the shaft due to the smudges / foreign matter adhesion
(9)	Abnormal sound from the fuser section	Smudges / foreign objects adhesion or the interference between the parts in the fuser section
(10)	Abnormal sound from inside the machine	Open and close operation failure of the toner supply opening of the toner container, the lack of toner amount, or the toner condensation
(11)	Abnormal sound from inside the machine	Smudges / foreign objects adhesion or the toner condensation in the developer section
(12)	Abnormal sound from inside the machine	Frictional wear, smudges / foreign objects adhesion, or the waste toner clogging in the drum section
(13)	Abnormal sound from inside the machine (jumping sounds)	Opening/closing operation failure, dirtiness, smudges / foreign objects adhesion of the waste toner vent of the primary transfer section
(14)	The rotation sound of the fan is noisy	
(15)	The driving sound is noisy during printing	The operation sounds in the drive section

## Content of Abnormal Noise

### (1) Abnormal noise (Basic measures)

Step	Check description	Assumed cause	Measures	Reference
1	Applying the grease	The grease on each gear or bushing is not enough.	Check the rotation of the roller, pulley and the gears, and apply the grease to the gears and the bushings if not rotating smoothly.	
2	Checking the gear and the bushing	The parts such as each gear or bushing are not properly attached.	Reattach the gear or the bushing.	

### (2) Abnormal sounds from the paper conveying section

Frictional wear, smudges / foreign objects adhesion on the conveying rollers, pulleys and the gears

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning and applying the grease	The bearings or gears are dirty or the foreign objects adhere.	Clean the conveying roller bushing and drive gear and apply grease	
2	Cleaning and applying the grease	The inside of the pulley is worn down.	Clean the conveying pulley drive shaft and apply grease	
3	Checking the conveying drive unit	The conveying drive unit is faulty.	Replace the conveying drive unit.	

### (3) Abnormal sound from the developer section

Caused by the developer unit.

Step	Check description	Assumed cause	Measures	Reference
1	Checking the developer unit	The developer unit drive is faulty.	Isolate the abnormal developer unit, and check if the developer powder does not leak from the developer unit, there is no damage, or the roller rotates manually. And, repair the parts if necessary.	
2	Replacing the developer unit	The developer unit is faulty.	Replace the developer unit with faulty color.	

#### (4) Abnormal sound from the exit section

Smudges / foreign objects adhesion in the exit section

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning and applying the grease	The bearings or gears are dirty or the foreign objects adhere.	Clean the bushing and the gear of the exit roller and apply grease to them.	
2	Cleaning and applying the grease	The bearings are dirty or the foreign objects adhere.	Clean the shaft of the exit pulley and apply grease to it.	
3	Checking the shaft of the feed-shift guide	The bearings are dirty or the foreign objects adhere.	Clean the shaft of the feed-shift guide and apply grease to it.	

#### (5) Abnormal sound from the primary paper feed section

Frictional wear, smudges / foreign objects adhesion, attachment failure of the primary paper feed section

Step	Check description	Assumed cause	Measures	Reference
1	Checking the gear and the clutch	The parts such as the gear or the clutch are not properly attached.	Reattach the primary paper feed drive components such as the gear or the clutch if they are not properly attached.	
2	Cleaning and applying the grease	The gear, bushing, etc. is dirty or foreign objects adhere to it	Clean the primary paper feed drive components such as the gear or the bushing and apply the grease to them.	
3	Cleaning and applying the grease	The shaft, bushing, etc. is dirty or foreign objects adhere to it	Clean the shaft and the bushing of the paper feed roller and apply the grease to them.	
4	Checking the separation pad	The separation pad surface is dirty or worn down.	Clean the separation pad, or replace it if necessary.	

#### (6) Abnormal sound from the machine front side

Wear, dirtiness, foreign objects adhesion or attachment failure at the MP feed section

Step	Check description	Assumed cause	Measures	Reference
1	Checking the gear and the clutch	The parts such as the gear or the clutch are not properly attached.	When the gears or the clutch in the MP paper feed drive section are not properly attached, reattach them.	
2	Cleaning and applying the grease	The shaft or the bushing is dirty or foreign objects are on them.	Clean the shaft and the bushing of the MP paper feed roller and apply the grease to them.	
3	Checking the MP separation pad	The surface of the MP separation pad is dirty or worn down.	Clean the MP separation pad. Then, replace it if necessary.	

Step	Check description	Assumed cause	Measures	Reference
4	Checking the MP conveying belt	The MP conveying belt is not attached properly or is loosened	Reattach the MP conveying belt. Then, replace it if not repaired.	
5	Reattach the MP lift plate.	The MP lift plate is not attached properly.	Reattach the MP lift plate.	

### (7) Abnormal sound from the lower side than the fuser exit section

Rubbing sound between the bushing and the stop ring of the fuser exit roller due to the smudges / foreign objects adhesion

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning and applying the grease	The fuser exit roller, bushing or the stop ring are dirty, or foreign objects are on them.	Clean the fuser exit roller, bushing and the stop ring and apply the lubricant to them.	
2	Replacing the fuser unit	The fuser unit is faulty.	Replace the fuser unit.	

### (8) Abnormal sound from the upper side of the fuser exit section

Rubbing sound between the fuser exit pulley and the shaft due to the smudges / foreign matter adhesion

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning and applying the grease	The pulley or the shaft is dirty, or foreign matter is on them.	Clean the fuser exit pulley and the shaft and apply the lubricant to them.	
2	Replacing the fuser unit	The fuser unit is faulty.	Replace the fuser unit.	

### (9) Abnormal sound from the fuser section

Smudges / foreign objects adhesion or the interference between the parts in the fuser section

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning and applying the grease	The bushing or the gear is dirty or foreign objects are on them.	Clean the bushing and gear of the fuser heat roller and fuser press roller, and apply grease	
2	Cleaning and applying the grease	The shaft is dirty or foreign objects are on it.	Clean the fuser exit pulley and the shaft and apply the lubricant to them.	
3	Cleaning and applying the grease	The gear is dirty or foreign objects are on it.	Clean the fuser drive gear and apply the grease to it.	
4	Applying the grease	The grease is not enough.	Apply the grease to the pressure release cam and the frame.	

Step	Check description	Assumed cause	Measures	Reference
5	Replacing the fuser unit	The fuser forwarding guide is bent and contacts the fuser pressure roller.	Replace the fuser unit.	

### (10)Abnormal sound from inside the machine

Open and close operation failure of the toner supply opening of the toner container, the lack of toner amount, or the toner condensation

Step	Check description	Assumed cause	Measures	Reference
1	Checking the toner supply opening	The spring for opening and closing of the toner supply opening is hooked with the other parts, or deformed.	Open and close the toner supply opening of the toner container to correct	
2	Checking the toner remaining amount	The agitating paddle is bent or toner amount is small in the toner container	Check the toner remaining amount and replace the toner container if necessary.	
3	Checking the toner container	The torque increases due to the toner condensation.	Shake the toner container enough and reinstall it. Or, replace it.	

### (11)Abnormal sound from inside the machine

Smudges / foreign objects adhesion or the toner condensation in the developer section

Step	Check description	Assumed cause	Measures	Reference
1	Checking the toner supply opening	The spring to open/close the toner shutter is caught up or deformed.	Open and close the toner supply opening of the developer unit to correct	
2	Checking the developer roller	The original roller shaft and bushing are dirty or foreign objects adhere	Check if the developer roller rotates. If not rotating smoothly, clean the shaft or the bushing of the developer roller.	
3	Checking the developer unit	The torque inside the developer unit increased due to the toner condensation, etc.	Clean the developer unit. Then, replace it if the issue is not resolved.	

### (12)Abnormal sound from inside the machine

Frictional wear, smudges / foreign objects adhesion, or the waste toner clogging in the drum section

Step	Check description	Assumed cause	Measures	Reference
1	Executing Drum refresh	Toner is not enough on the drum.	Execute the drum refresh to supply the toner to the cleaning unit.	



Step	Check description	Assumed cause	Measures	Reference
2	Checking the drum screw	The drum screw does not properly rotate.	Check if the drum screw rotates. If not rotating smoothly, clean it. If it locks up, replace the drum unit.	
3	Cleaning and applying the grease	Foreign objects are on the tooth of the drum drive gear, or the grease is not enough.	Clean the tooth of the drum drive gear and apply the grease to them.	
4	Checking the drum unit and the developer unit	The torque inside the drum unit increased due to the waste toner clogging, etc.	Execute the drum refresh. If not repaired, replace the drum unit.	

### (13) Abnormal sound from inside the machine (jumping sounds)

Opening/closing operation failure, dirtiness, smudges / foreign objects adhesion of the waste toner vent of the primary transfer section

Step	Check description	Assumed cause	Measures	Reference
1	Checking the shutter of the toner waste vent	The shutter of the waste toner vent is not properly opened and closed.	Check the opening and closing operation of the shutter of the toner waste vent in the transfer cleaning unit, and fix the parts if necessary.	
2	Checking the cleaning screw	The cleaning screw does not properly rotate.	Check if the cleaning screw in the transfer cleaning unit rotates smoothly, and clean it if not rotating smoothly.	
3	Cleaning the transfer cleaning unit	The transfer cleaning unit is dirty.	Clean the inside of the transfer cleaning unit.	
4	Cleaning and applying the grease	The drive gear or the bushing is dirty, or foreign objects are on them.	Clean the parts in the primary transfer unit such as the drive gear and the bushing, and apply the grease to them.	
5	Replacing the primary transfer unit	The primary transfer unit is faulty.	Replace the primary transfer unit.	

### (14) The rotation sound of the fan is noisy

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning the fan motor	The fan section of the fan motor is dirty	Isolate the fan motor with the noisy sounds and clean the fans.	
2	Checking the fan motor	The fan motor is not properly attached, or it is faulty.	Reattach the fan motor and reinsert the connector. If not repaired, replace it.	

**(15)The driving sound is noisy during printing**

The operation sounds in the drive section

<b>Step</b>	<b>Check description</b>	<b>Assumed cause</b>	<b>Measures</b>	<b>Reference</b>
1	Changing the settings	The Quiet Mode is off.	Set [On] at [Adjustment/Maintenance] > [Quiet Mode] via the System Menu.	

## 7-7 Malfunction

No.	Contents	Condition
(1)	The main unit does not operate at all even if the power switch is turned on	
(2)	The paper jam occurs in the feed section, the conveying section or the exit section at the same time as turning on the power switch.	
(3)	Paper skew	
(4)	Toner drops over the paper conveying section.	
(5)	The login fails with other than the ID card	

### Content of Malfunction

#### (1) The main unit does not operate at all even if the power switch is turned on

Step	Check description	Assumed cause	Measures	Reference
1	Changing the external power source	The power cord has no continuity.	Plug the power cord into another wall outlet.	
2	Replacing the power cord	The power plug of the power cord is faulty.	Replace the power cord when the power plug is deformed, or it is faulty.	
3	Replacing the power cord	The power cord is faulty.	Check the continuity in the power cord, and replace the power cord if there is no continuity.	
4	Replacing the power switch	The power switch is faulty.	Check the continuity between the contacts of the power switch. Then, replace the power switch if there is no continuity.	
5	Checking the low voltage PWB	The connector is not connected properly. The wire or the PWB is faulty.	Clean the terminal of the connectors on the low voltage PWB, then reconnect the wire connector. If the wire is faulty, repair or replace it. If not repaired, replace the low voltage PWB.	

**(2) The paper jam occurs in the feed section, the conveying section or the exit section at the same time as turning on the power switch.**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the paper path	The paper is caught on a piece of paper, foreign objects or the burrs on the parts in the conveying path.	Remove paper strip or foreign objects adhering on the conveying path, or burrs on the parts such as guide, actuator, etc.	
2	Checking the sensor	There is a fault in each sensor on the paper path.	Reattach the sensor where the paper jam occurred and reconnect the connector. If not repaired, replace it.	

**(3) Paper skew**

Step	Check description	Assumed cause	Measures	Reference
1	Relocating the paper width guides or the MP paper width guides	The locations of the paper width guides or the MP paper width guides do not match the paper size.	Relocate the paper width guides or the MP paper width guides to match the paper size.	
2	Reattaching the paper width guides or MP paper width guides	The paper width guides or the MP paper width guides are not properly attached.	Reattach the paper width guides or MP paper width guides	
3	Replacing the paper width guides or MP paper width guides	The paper width guides or the MP paper width guides are faulty.	Replace the paper width guides or the MP paper width guides.	

**(4) Toner drops over the paper conveying section.**

Step	Check description	Assumed cause	Measures	Reference
1	Cleaning the developer unit and drum unit	The developer unit or drum unit is dirty.	Clean the developer unit and drum unit.	

**(5) The login fails with other than the ID card**

Step	Check description	Assumed cause	Measures	Reference
1	Checking the settings	[User/Job Account] is valid while the card authentication kit is not installed.	Set [Permit] at [User/Job Account] > [ID Card Settings] > [Key Login] via the System Menu.	

## 8 PWBs

### 8-1 Description for PWB

#### (1) Main/Engine PWB

##### (1-1) PWB photograph

30/35 ppm model



Figure 8-16

40 ppm model



Figure 8-17

## (1-2) Connector position

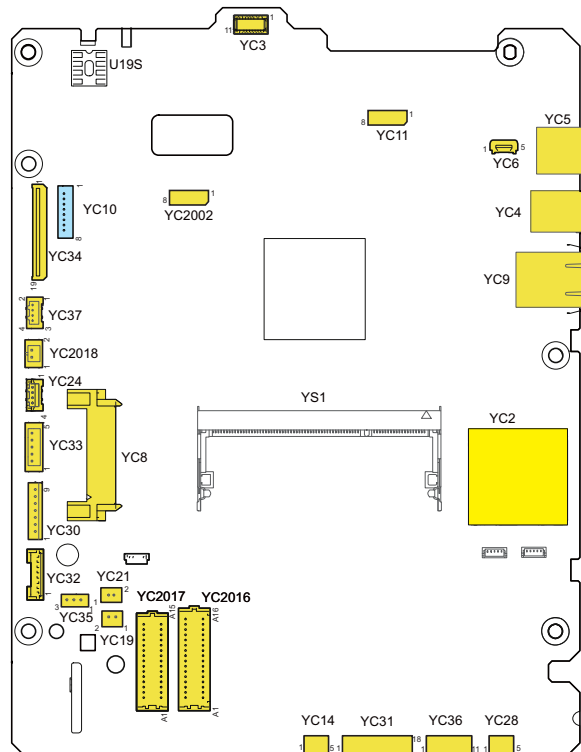


Figure 8-18

## (1-3) Connector lists

### Connector access point

- YC2:SD card
- YC3:WiFi(IB-36)(Option)
- YC4:USB device
- YC5:USB host (Rear)
- YC6:USB host (Front)
- YC8:eKUIO PWB
- YC9:Ethernet
- YC10: High-voltage PWB 2\*2
- YC11: Exit PWB
- YC14: ID sensor 2
- YC19: Power supply fan motor
- YC21: Registration clutch
- YC24: Outer temperature sensor
- YC28: ID sensor 1
- YC30: Power supply PWB
- YC31: Engine relay PWB
- YC32: Engine relay PWB
- YC33: Power supply PWB
- YC34: High-voltage PWB
- YC35: Registration sensor
- YC36: Drum relay PWB
- YC37: Toner container switch, Tray switch
- YC2002: Operation panel PWB
- YC2016: APC PWB K, APC PWB M, and Polygon motor KM
- YC2017: APC PWB C, APC PWB Y, and Polygon motor CY
- YC2018: Power switch

Connector	Pin	Signal	I/O	Voltage	Description
<b>YC2</b>	1	CD/DAT3	IO	3.3 V DC (pulse)	Data[3]
	2	CMD	IO	3.3 V DC (pulse)	Command
	3	VSS	O	-	Ground
	4	VDD	O	3.3 V DC	Power output
	5	CLK	O	3.3 V DC (pulse)	Transfer clock
	6	VSS	O	-	Ground
	7	DAT0	IO	3.3 V DC (pulse)	Data[0]
	8	DAT1	IO	3.3 V DC (pulse)	Data[1]
	9	DAT2	IO	3.3 V DC (pulse)	Data[2]
	10	CD	I	3.3 V DC	Detecting switch
	11	COMMON	I	-	Common connection (Ground)
	12	WP	I	3.3 V DC	Write-Protect
<b>YC3</b>	1	SD_D3	I/O	0/3.3 V DC	Serial data I/O signal
	2	SD_D2	I/O	0/3.3 V DC	Serial data I/O signal
	3	SD_CMD	I/O	0/3.3 V DC	Serial data command I/O signal
	4	GND	-	-	Ground
	5	SD_CLK	O	0/3.3 V DC	Serial data CLK I/O signal
	6	GND	-	-	Ground
	7	SD_D1	I/O	0/3.3 V DC	Serial data I/O signal
	8	SD_D0	I/O	0/3.3 V DC	Serial data I/O signal
	9	GND	-	-	Ground
	10	VIO	O	3.3 V DC	3.3 V DC power output
	11	VBAT	O	3.3 V DC	3.3 V DC power output
	12	GND	-	-	Ground
	13	PAVDD	O	3.3 V DC	3.3 V DC power output
	14	GND	-	-	Ground
	15	HOST WAKE	I	0/3.3 V DC	WakeUp signal
	16	GND	-	-	Ground
	17	N.C	-	-	Not used
	18	DETECT	I	0/3.3 V DC	Device detecting signal
	19	N.C	-	-	Not used
	20	N.C	-	-	Not used
<b>YC4</b>	1	VBUS	O	0/3.3 V DC (pulse)	VBUS
	2	D-	IO	0.4 V DC (pulse)	Data (-)
	3	D+	IO	0.4 V DC (pulse)	Data (+)
	4	GND	-	-	Ground
	5	STDB_SSTX-	IO	-	Not used

Connector	Pin	Signal	I/O	Voltage	Description
<b>YC4</b>	6	STDB_SSTX+	IO	-	Not used
	7	GND	-	-	Ground
	8	STDB_SSRX-	IO	-	Not used
	9	STDB_SSRX+	IO	-	Not used
<b>YC5</b>	1	VBUS	O	24 V DC	VBUS
	2	DATA-	IO	24 V DC	Data (-)
	3	DATA+	IO	-	Data (+)
	4	ID	-	-	Not used
	5	SHEELD-G	O	-	Ground
<b>YC6</b>	1	VBUS	O	24 V DC	VBUS
	2	DATA-	IO	24 V DC	Data (-)
	3	DATA+	IO	-	Data (+)
	4	ID	-	-	Not used
	5	SHEELD-G	O	-	Ground
<b>YC8</b>	1	VBUS1	O	5 V DC	VBUS
	2	USB_DN1	IO	-400 to +400 mV (pulse)	Data (-)
	3	USB_DP1	IO	-400 to +400 mV (pulse)	Data (+)
	4	AUDIO1	-	-	Not used
	5	WAKEUP1	I	3.3 V DC	Recovery request
	6	RESET1	O	5 V DC	Reset
	7	GND	-	-	Ground
	8	GND	-	-	Ground
	9	GND	-	-	Ground
	10	GND	-	-	Ground
	11	GND	-	-	Ground
	12	NC	-	-	Not used
	13	DC5V2_C2	O	5 V DC	Power output
	14	DC5V2_C2	O	5 V DC	Power output
	15	DC5V2_C2	O	5 V DC	Power output
	16	DC5V2_C2	O	5 V DC	Power output
	17	DC5V2_C2	O	5 V DC	Power output
	18	DC5V2_C2	O	5 V DC	Power output
	19	DC5V2_C2	O	5 V DC	Power output
	20	DC5V1_C	O	5 V DC	Power output
	21	DC5V1_C	O	5 V DC	Power output
	22	DC5V1_C	O	5 V DC	Power output



Connector	Pin	Signal	I/O	Voltage	Description
<b>YC8</b>	23	NC	-	-	Not used
	24	GND	-	-	Ground
	25	GND	-	-	Ground
	26	GND	-	-	Ground
	27	GND	-	-	Ground
	28	VBUS0	O	5 V DC	VBUS
	29	USB_DN0	IO	-400 to +400 mV (pulse)	Data (-)
	30	USB_DP0	IO	-400 to +400 mV (pulse)	Data (+)
	31	AUDIO0	I	Analog	FAX Audio
	32	WAKEUP0	I	3.3 V DC	Recovery request
33	RESET0	O	5 V DC	Reset	
<b>YC9</b>	R1	TD1+	IO	-1.0 to +1.0 (pulse)	Data
	R2	TD2-	IO	-1.0 to +1.0 (pulse)	Data
	R3	TD1+	IO	-1.0 to +1.0 (pulse)	Data
	R4	TD2-	IO	-1.0 to +1.0 (pulse)	Data
	R5	CT1	-	-	Center tap
	R6	CT2	-	-	Center tap
	R7	TD3+	IO	-1.0 to +1.0 (pulse)	Data
	R8	TD3-	IO	-1.0 to +1.0 (pulse)	Data
	R9	TD4+	IO	-1.0 to +1.0 (pulse)	Data
	R10	TD4-	IO	-1.0 to +1.0 (pulse)	Data
	L1	YWLED_A	O	3.3 V DC	LED anode (Power supply output)
	L2	YWLED_K	I	-	LED cathode (Ground)
	L3	GRLED_K	I	-	LED cathode (Ground)
	L4	GRLED_A	O	3.3 V DC	LED anode (Power supply output)
<b>YC10 (40 ppm model)</b>	1	GND	-	-	Ground
	2	T1KCNT	O	+3.3V Analog	Primary transfer DC output control signal (K)
	3	T1CCNT	O	+3.3V Analog	Primary transfer DC output control signal (C)
	4	CLCNT	O	+3.3V Analog	Cleaning DC output control signal
	5	HVREMN	O	0/3.3 V DC	Primary transfer (reverse) output OFF/ON signal
	6	T1YCNT	O	+3.3V Analog	Primary transfer DC output control signal (Y)
	7	T1MCNT	O	+3.3V Analog	Primary transfer DC output control signal (M)
	8	+24V3_IL	O	24 V DC	24 V DC power output
<b>YC11</b>	1	NCTHCOM	I	Analog	NC compensating voltage
	2	FTHERM1	I	Analog	Fuser thermistor 1 detecting voltage

Connector	Pin	Signal	I/O	Voltage	Description
<b>YC11</b>	3	NCTHDET	I	Analog	Fuser thermistor 2 detecting voltage
	4	+3.3V3_E	O	3.3 V DC	3.3 V DC power output
	5	PDIRN	I	0/3.3 V DC	Press-release sensor: On/Off
	6	PDFULL	I	0/3.3 V DC	Paper full sensor: On/Off
	7	FUSJAM	I	0/3.3 V DC	Exit sensor: On/Off
	8	GND	-	-	Ground
<b>YC14</b>	1	VOPR	I	Analog	ID sensor 2 S signal input
	2	VOSR	I	Analog	ID sensor 2 P signal input
	3	GND	-	-	Ground
	4	LEDREFR	O	Analog	ID sensor 2 reference signal output
	5	+3.3V3_E	O	3.3 V DC	3.3 V DC power output
<b>YC19</b>	1	+24V0	O	24 V DC	24 V DC power output
	2	LVUFANDRVN	O	0/12/24 V DC	Power source fan motor: full speed/half speed/Off
<b>YC21</b>	1	+24V3_IL	O	24 V DC	24 V DC power output
	2	REGCLDRVN	O	0/24 V DC	Registration clutch: On/Off
<b>YC24</b>	1	AIRTEMP	I	Analog	Outer temperature sensor detecting voltage (temperature)
	2	+3.3V3_E	O	3.3 V DC	3.3 V DC power output
	3	HUMOUT	I	Analog	Outer temperature sensor detecting voltage (humidity)
	4	HUMCLK	O	0/3.3 V DC (pulse)	Outer temperature sensor clock signal
<b>YC28</b>	1	VOPL	I	Analog	ID sensor 1 S signal input
	2	VOSL	I	Analog	ID sensor 1 P signal input
	3	GND	-	-	Ground
	4	LEDREFL	O	Analog	ID sensor 1 reference signal output
	5	+3.3V3_E	O	3.3 V DC	3.3 V DC power output
<b>YC30</b>	1	+24V0	O	24 V DC	24 V DC power output
	2	+24V0	O	24 V DC	24 V DC power output
	3	GND	-	-	Ground
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	GND	-	-	Ground
	7	+24V0_IL	O	24 V DC	24 V DC power output
	8	+24V0_IL	O	24 V DC	24 V DC power output
	9	+24V0_IL	O	24 V DC	24 V DC power output
<b>YC31</b>	1	EGASSDI	I	0/3.3 V DC (pulse)	Serial communication data input
	2	GND	-	-	Ground

Connector	Pin	Signal	I/O	Voltage	Description	
YC31	3	EGASCS	O	0/3.3 V DC	Serial communication chip select signal	
	4	EGASEN	I	0/3.3 V DC	Serial communication enable signal	
	5	+3.3V1_C/ DUTY_CON- TROL	O	3.3 V DC	3.3 V DC power output	
	6	EGASSDO	O	0/3.3 V DC (pulse)	Serial communication data output	
	7	+3.3V3_E	O	3.3 V DC	3.3 V DC power output	
	8	EGASSCK	O	0/3.3 V DC (pulse)	Serial communication clock signal	
	9	WAKEUPINTN	I	0/3.3 V DC	Engine CPU return signal	
	10	FRAM2SDA/ 1WIRE	I/O	0/3.3 V DC	Security communication data	
	11	ERRTEMP	O	0/3.3 V DC	Abnormal high temperature detecting signal	
	12	FRAM2SCL	O	0/3.3 V DC (pulse)	Security communication clock	
	13	+3.3V3_E	O	3.3 V DC	3.3 V DC power output	
	14	OPSDO	O	0/3.3 V DC (pulse)	Option serial data output	
	15	OPRDYN	I	0/3.3 V DC	Option ready signal	
	16	OPSDI	I	0/3.3 V DC (pulse)	Option serial data input	
	17	GND	-	-	Ground	
	18	OPSCK	O	0/3.3 V DC (pulse)	Option serial clock signal	
	YC32	1	+24V0	I	24 V DC	24 V DC power input
		2	GND	-	-	Ground
3		GND	-	-	Ground	
4		GND	-	-	Ground	
5		GND	-	-	Ground	
6		+24V3_IL	I	24 V DC	24 V DC power input	
7		+24V3_IL	I	24 V DC	24 V DC power input	
8		+24V3_IL	I	24 V DC	24 V DC power input	
YC33	1	PSSLEEPN	O	0/24 V DC	Sleep mode signal: On/Off	
	2	ZCROSSN	I	0/3.3 V DC (pulse)	Zero cross signal	
	3	RELAYON	O	0/3.3 V DC	Power relay signal: On/Off	
	4	HEATREM1	O	0/3.3 V DC	Fuser heater 1: On/Off	
	5	HEATREM2	O	0/3.3 V DC	Fuser heater 2: On/Off	
YC34	1	+24V3_IL	O	24 V DC	24 V DC power output	
	2	+24V3_IL	O	24 V DC	24 V DC power output	
	3	DACSLD1	O	0/3.3 V DC (pulse)	DAC1 load signal	
	4	DACSLD2	O	0/3.3 V DC (pulse)	DAC2 load signal	
	5	DACSCLK	O	0/3.3 V DC (pulse)	DAC clock signal	
	6	SGND	-	-	Ground	

Connector	Pin	Signal	I/O	Voltage	Description
YC34	7	DACSDO	I/O	0/3.3 V DC (pulse)	DAC data signal
	8	HVREMNI	O	0/3.3 V DC	Primary/Secondary transfer remote signal
	9	HVCLKK	O	0/3.3 V DC	Developer clock signal
	10	MISENS	I	Analog	Main charger current detecting output
	11	PGND	-	-	Ground
	12	PGND	-	-	Ground
	13*2	HVCLKY	O	0/3.3 V DC (pulse)	Developer (Y) clock signal
	14*2	HVCLKM	O	0/3.3 V DC (pulse)	Developer (M) clock signal
	15*2	HVCLKC	O	0/3.3 V DC (pulse)	Developer (C) clock signal
	16*2	MCHGCLK	O	0/3.3 V DC (pulse)	Main charger clock signal
	17*2	MYISENS	I	Analog	Main charger (Y) current detecting output
	18*2	MMISENS	I	Analog	Main charger (M) current detecting output
	19*2	MCISENS	I	Analog	Main charger (C) current detecting output
YC35	1	GND	-	-	Ground
	2	REGPAP	I	0/3.3 V DC	Registration sensor: On/Off
	3	+3.3V3_E	O	3.3 V DC	3.3 V DC power output
YC36	1	GND	-	-	Ground
	2	PTSCL	O	0/3.3 V DC (pulse)	E2PROM communication clock signal
	3	+3.3V3_E	O	3.3 V DC	3.3 V DC power output
	4	PTSDA	I/O	0/3.3 V DC (pulse)	E2PROM communication data signal
	5	TNSENC	I	Analog	Toner sensor remaining level signal (C)
	6	TNSENY	I	Analog	Toner sensor remaining level signal (Y)
	7	TNSENK	I	Analog	Toner sensor remaining level signal (K)
	8	TNSENM	I	Analog	Toner sensor remaining level signal (M)
	9	DRMHEATDR	O	24 V DC	24 V DC power output
	10	DLP THERM	I	Analog	Developer thermistor
	11	ERASE	O	24 V DC	Eraser (BK) ON signal
YC37	1	GND	-	-	Ground
	2	TCONTERRN	I	0/3.3 V DC	Toner container switch: On/Off
	3	GND	-	-	Ground
	4	TOPOPNI	I	0/3.3 V DC	Top cover opening/closing determination switch: On/Off
YC2002	1	+5.0V1_C1	O	5 V DC	5 V DC power output
	2	FPRSTNI	O	0/3.3 V DC	Reset signal
	3	+3.3V1_C	O	3.3 V DC	3.3 V DC power output
	4	FPRXDI	I	0/3.3 V DC (pulse)	Serial communication data
	5	FPTXDI	O	0/3.3 V DC (pulse)	Serial communication data
	6	GND	-	-	Ground

Connector	Pin	Signal	I/O	Voltage	Description
YC2002	7	INT_OKKEY_N	I	0/3.3 V DC	OK/GO key return notification signal
	8	INT_ME- NUKEY_N	I	0/3.3 V DC	MENU key return notification signal
YC2016	A1	POLKMREM N	O	0/5 V DC	Polygon motor drive signal
	A2	POLKMRDYN	I	0/3.3 V DC	Polygon motor ready signal
	A3	POLKMCLK	O	0/5 V DC	Polygon motor clock signal
	A4	N.C	-	-	Not used
	A5	PDMN	I	0/3.3 V DC	BD (M) detecting signal
	A6	+3.3V3_E	O	3.3 V DC	3.3 V DC power output
	A7	VDOM1P	O	LVDS	Video 1 differential signal P (M)
	A8	VDOM1N	O	LVDS	Video 1 differential signal N (M)
	A9	GND	-	-	Ground
	A10	VDOM2P	O	LVDS	Video 2 differential signal P (M)
	A11	VDOM2N	O	LVDS	Video 2 differential signal N (M)
	A12	SAMPLEM1N	O	0/3.3 V DC	Sample hold 1 signal (M)
	A13	SAMPLEM2N	O	0/3.3 V DC	Sample hold 2 signal (M)
	A14	OUTPEMN	O	0/3.3 V DC	Output enable signal (M)
	A15	VREFM	O	Analog	Reference voltage (M)
	A16	+5.0V3	O	5 V DC	5 V DC power output
	B1	+5.0V3	O	5 V DC	5 V DC power output
	B2	VREFK	O	Analog	Reference voltage (K)
	B3	OUTPEKN	O	0/3.3 V DC	Output enable signal (K)
	B4	SAMPLEK2N	O	0/3.3 V DC	Sample hold 2 signal (K)
	B5	SAMPLEK1N	O	0/3.3 V DC	Sample hold 1 signal (K)
	B6	VDOK2N	O	LVDS	Video 2 differential signal N (K)
	B7	VDOK2P	O	LVDS	Video 2 differential signal P (K)
	B8	GND	-	-	Ground
	B9	VDOK1N	O	LVDS	Video 1 differential signal N (K)
	B10	VDOK1P	O	LVDS	Video 1 differential signal P (K)
	B11	+3.3V3_E	O	3.3 V DC	3.3 V DC power output
	B12	PDKN	I	0/3.3 V DC	BD (K) detecting signal
	B13	LSUTHMK	I	Analog	LSU thermistor signal
	B14	N.C	-	-	Not used
	B15	+24V3_IL	O	24 V DC	24 V DC power output
	B16	GND	-	-	Ground
YC2017	A1	POLCYREM N	O	0/5 V DC	Polygon motor drive signal
	A2	POLCYRDYN	I	0/3.3 V DC	Polygon motor ready signal
	A3	POLCYCLK	O	0/5 V DC	Polygon motor clock signal

Connector	Pin	Signal	I/O	Voltage	Description	
<b>YC2017</b>	A4	PDYN	I	0/3.3 V DC	BD (Y) detecting signal	
	A5	+3.3V3_E	O	3.3 V DC	3.3 V DC power output	
	A6	VDOY1P	O	LVDS	Video 1 differential signal P (Y)	
	A7	VDOY1N	O	LVDS	Video 1 differential signal N (Y)	
	A8	GND	-	-	Ground	
	A9	VDOY2P	O	LVDS	Video 2 differential signal P (Y)	
	A10	VDOY2N	O	LVDS	Video 2 differential signal N (Y)	
	A11	SAMPLEY1N	O	0/3.3 V DC	Sample hold 1 signal (Y)	
	A12	SAMPLEY2N	O	0/3.3 V DC	Sample hold 2 signal (Y)	
	A13	OUTPEYN	O	0/3.3 V DC	Output enable signal (Y)	
	A14	VREFY	O	Analog	Reference voltage (Y)	
	A15	+5.0V3	O	5 V DC	5 V DC power output	
	B1	+5.0V3	O	5 V DC	5 V DC power output	
	B2	VREFC	O	Analog	Reference voltage (C)	
	B3	OUTPECN	O	0/3.3 V DC	Output enable signal (C)	
	B4	SAMPLEC2N	O	0/3.3 V DC	Sample hold 2 signal (C)	
	B5	SAMPLEC1N	O	0/3.3 V DC	Sample hold 1 signal (C)	
	B6	VDOC2N	O	LVDS	Video 2 differential signal N (C)	
	B7	VDOC2P	O	LVDS	Video 2 differential signal P (C)	
	B8	GND	-	-	Ground	
	B9	VDOC1N	O	LVDS	Video 1 differential signal N (C)	
	B10	VDOC1P	O	LVDS	Video 1 differential signal P (C)	
	B11	+3.3V3_E	O	3.3 V DC	3.3 V DC power output	
	B12	PDCN	I	0/3.3 V DC	BD (C) detecting signal	
	B13	LSUTHMC	I	Analog	LSU thermistor signal	
	B14	+24V3_IL	O	24 V DC	24 V DC power output	
	B15	GND	-	-	Ground	
	<b>YC2018</b>	1	POWER_SW	I	0/3.3 V DC	Power key SW detecting signal
		2	GND	-	-	Ground

\*1: 35/40 ppm model only

\*2: 40 ppm model only

(2) Engine relay PWB

(2-1) Connector position

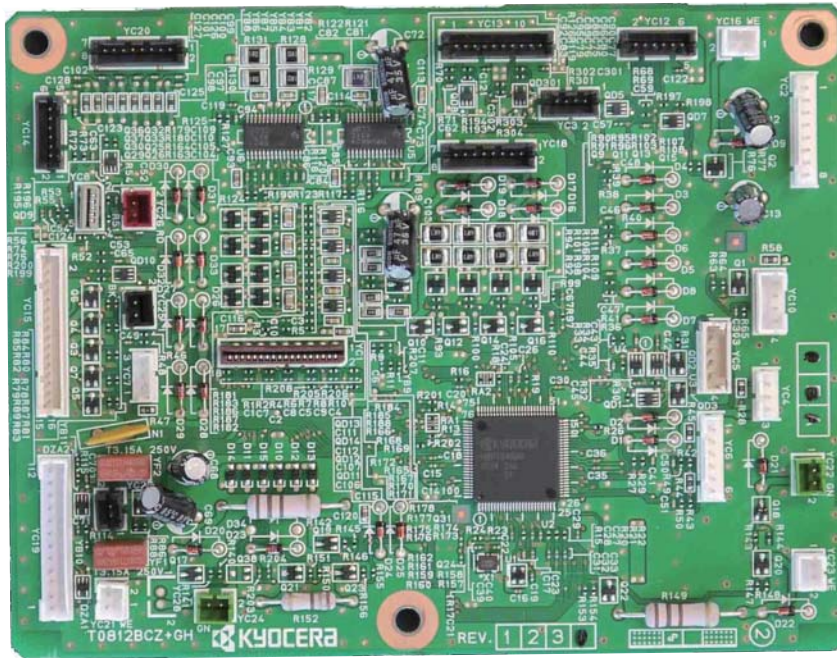


Figure 8-19

(2-2) PWB photograph

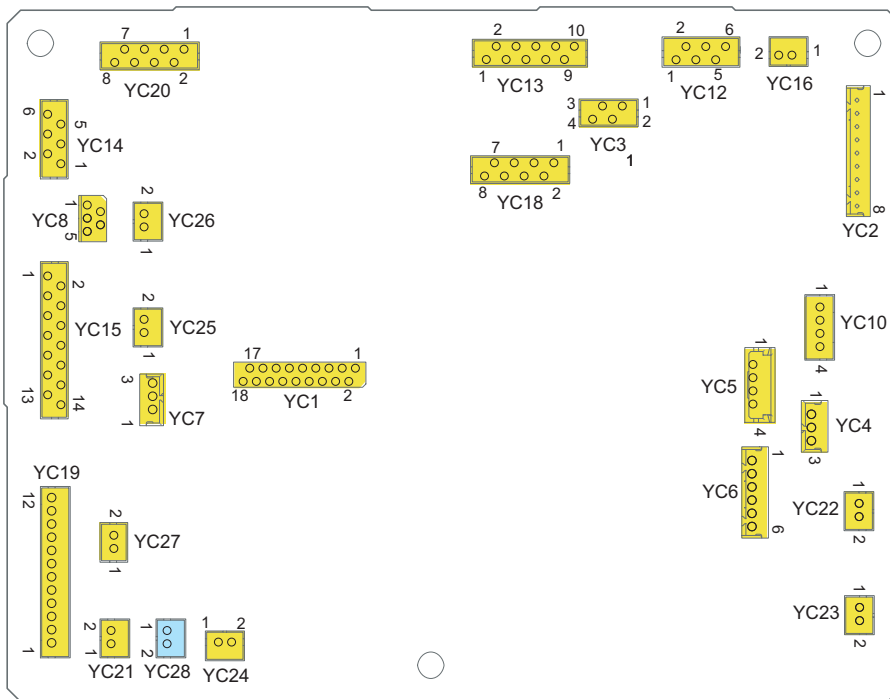


Figure 8-20

## (2-3) Connector lists

### Connector access point

- YC1: Main/engine PWB
- YC2: Main/engine PWB
- YC3: Toner container relay PWB
- YC4: Waste toner cover sensor
- YC5: Cassette size switch
- YC6: MP paper sensor, MP conveying sensor
- YC7: Duplex sensor \*1
- YC8: Cassette PWB
- YC10: Waste toner sensor
- YC12: Developer motor
- YC13: Drum motor 1, Drum motor 2
- YC14: Primary transfer motor
- YC15: Conveying and developer motor, Developer clutch, Middle clutch, MP conveying clutch, Feed clutch \*1
- YC16: MP solenoid
- YC18: Toner motor Y, C, M, K
- YC19: Paper feeder
- YC20: Fuser motor, Duplex exit motor
- YC21: LSU fan motor 1
- YC22: Transfer fan motor \*1
- YC23: LSU fan motor 2
- YC24: Container fan motor
- YC25: Lift motor
- YC26: LSU cleaning motor
- YC27: Exit fan motor \*1
- YC28: Exit fan motor \*2
- \*1: 35/40 ppm model only
- \*2: 40 ppm model only

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	EGASSDI	I	0/3.3 V DC (pulse)	Serial communication data input
	2	GND	-	-	Ground
	3	EGASCS	I	0/3.3 V DC	Serial communication chip select signal
	4	EGASEN	I	0/3.3 V DC	Serial communication enable signal
	5	+3.3V1_C	I	3.3 V DC	3.3 V DC power output
	6	EGASSDO	O	0/3.3 V DC (pulse)	Serial communication data output
	7	+3.3V3_E	I	3.3 V DC	3.3 V DC power output
	8	EGASSCK	O	0/3.3 V DC (pulse)	Serial communication clock signal
	9	WAKEUPINTN	O	0/3.3 V DC	Engine CPU return signal
	10	FRAM2SDA/ 1WIRE	I/O	0/3.3 V DC	Communication data
	11	ERRTEMP	O	0/3.3 V DC	Abnormal high temperature detecting signal
	12	FRAM2SCL	I	0/3.3 V DC (pulse)	Communication clock
	13	+3.3V3_E	I	3.3 V DC	3.3 V DC power output
	14	OPSDO	I	0/3.3 V DC (pulse)	Option serial data output
	15	OPRDYN	O	0/3.3 V DC	Option ready signal
	16	OPSDI	O	0/3.3 V DC (pulse)	Option serial data input



Connector	Pin	Signal	I/O	Voltage	Description
YC1	17	GND	-	-	Ground
	18	OPSCK	I	0/3.3 V DC (pulse)	Option serial clock signal
YC2	1	+24V3_IL	I	24 V DC	24 V DC power output
	2	+24V3_IL	I	24 V DC	24 V DC power output
	3	+24V3_IL	I	24 V DC	24 V DC power output
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	GND	-	-	Ground
	7	GND	-	-	Ground
	8	+24V0	I	24 V DC	24 V DC power output
YC3	1		-	-	-
	2	+3.3V3	O	3.3 V DC	3.3 V DC power output
	3	CMDATA	I/O	0/3.3 V DC	Communication data
	4	GND	-	-	Ground
YC4	1	+3.3V1_LED1	O	3.3 V DC	3.3 V DC power output
	2	GND	-	-	Ground
	3	WSTOPN	I	0/3.3 V DC	Waste toner cover sensor: On/Off
YC5	1	CAS2	I	0/3.3 V DC	Cassette size switch(SW2): On/Off
	2	CAS1	I	0/3.3 V DC	Cassette size switch(SW1): On/Off
	3	COM	-	-	Ground
	4	CAS0	I	0/3.3 V DC	Cassette size switch(SW0): On/Off
YC6	1	+3.3V3_LED1	O	3.3 V DC	3.3 V DC power output
	2	GND	-	-	Ground
	3	MPFPAP	I	0/3.3 V DC	MP paper sensor: On/Off
	4	+3.3V3_LED2	O	3.3 V DC	3.3 V DC power output
	5	GND	-	-	Ground
	6	MPFJAM	I	0/3.3 V DC	MP conveying sensor: On/Off
YC7 (35/40 ppm model)	1	+3,3V3_LED3	O	3.3 V DC	3.3 V DC power output
	2	GND	-	-	Ground
	3	DUPPAP	I	0/3.3 V DC	Duplex sensor: On/Off
YC8	1	GND	-	-	Ground
	2	PAPVOL2	I	0/3.3 V DC	-
	3	PAPVOL1	I	0/3.3 V DC	Paper sensor : On/Off
	4	LIFTSEN	I	0/3.3 V DC	Lift sensor : On/Off
	5	+3.3V3	O	3.3 V DC	3.3 V DC power output
YC10	1	LEDA	O	3.3 V DC	3.3 V DC power output
	2	LEDK	O	0/3.3 V DC (pulse)	Waste toner sensor LED emission signal

Connector	Pin	Signal	I/O	Voltage	Description
<b>YC10</b>	3	PTRE	I	Analog	Waste toner sensor detecting signal
	4	PTRC	O	3.3 V DC	3.3 V DC power output
<b>YC12</b>	1	MOTREV	O	0/3.3 V DC	Developer motor forward/reverse control signal
	2	DLPCMTRDYN	I	0/3.3 V DC	Developer motor ready signal
	3	DLPCMTCLK	O	0/5 V DC (pulse)	Developer motor clock signal
	4	DLPCMTREMN	O	0/5 V DC	Developer motor: On/Off
	5	GND	-	-	Ground
	6	+24V3	O	24 V DC	24 V DC power output
<b>YC13</b>	1	DRMMTRDYN	I	0/3.3 V DC	Drum motor 1 ready signal
	2	DRMMTCLK	O	0/5 V DC (pulse)	Drum motor 1 clock signal
	3	DRMMTREMN	O	0/5 V DC	Drum motor 1: On/Off
	4	GND	-	-	Ground
	5	+24V3	O	24 V DC	24 V DC power output
	6	DRMMT2RDYN	I	0/3.3 V DC	Drum motor 2 ready signal
	7	DRMMT2CLK	O	0/5 V DC (pulse)	Drum motor 2 clock signal
	8	DRMMT2REMN	O	0/5 V DC	Drum motor 2: On/Off
	9	GND	-	-	Ground
	10	+24V3	O	24 V DC	24 V DC power output
<b>YC14</b>	1	IMGCCW	I	-	CCW fixed control (Ground)
	2	IMGMTRDYN	I	0/3.3 V DC	Primary transfer motor ready signal
	3	IMGMTCLK	O	0/5 V DC (pulse)	Primary transfer motor clock signal
	4	IMGMTREMN	O	0/5 V DC	Primary transfer motor: On/Off
	5	GND	-	-	Ground
	6	+24V3	O	24 V DC	24 V DC power output
<b>YC15</b>	1	FEMOTREV	O	0/5 V DC	Paper conveying and developer motor forward/reverse control signal
	2	FEDMTRDYN	I	0/3.3 V DC	Paper conveying and developer motor ready signal
	3	FEDMTCLK	O	0/5 V DC (pulse)	Paper conveying and developer motor clock signal
	4	FEDMTREMN	O	0/5 V DC	Paper conveying and developer motor: On/Off
	5	GND	-	-	Ground
	6	+24V3	O	24 V DC	24 V DC power output
	7	DLPKCLDRN	O	0/24 V DC	Developer clutch: On/Off
	8	+24V3	O	24 V DC	24 V DC power output
	9	MIDCLDRN	O	0/24 V DC	Middle clutch: On/Off
	10	+24V3	O	24 V DC	24 V DC power output

Connector	Pin	Signal	I/O	Voltage	Description
<b>YC15</b>	11	MPFCLDRN	O	0/24 V DC	MP conveying clutch: On/Off
	12	+24V3	O	24 V DC	24 V DC power output
	13	FEDCLDRN	O	0/24 V DC	Paper feed clutch: On/Off
	14	+24V3	O	24 V DC	24 V DC power output
	15*1	DUPCLDRN	O	0/24 V DC	Middle clutch: On/Off
	16*1	+24V3	O	24 V DC	24 V DC power output
<b>YC16</b>	1	+24V3	O	24 V DC	24 V DC power output
	2	MPFSOLDRVN	O	0/24 V DC	MP solenoid: On/Off
<b>YC18</b>	1	TNMYDRVN	O	0/24 V DC (pulse)	Toner motor Y drive control signal
	2	+24V3	O	24 V DC	24 V DC power output
	3	TNMCDRVN	O	0/24 V DC (pulse)	Toner motor C drive control signal
	4	+24V3	O	24 V DC	24 V DC power output
	5	TNMMDRVN	O	0/24 V DC (pulse)	Toner motor M drive control signal
	6	+24V3	O	24 V DC	24 V DC power output
	7	TNMKDRVN	O	0/24 V DC (pulse)	Toner motor K drive control signal
	8	+24V3	O	24 V DC	24 V DC power output
<b>YC19</b>	1	+3.3V3	O	3.3 V DC	3.3 V DC power output
	2	-	-	-	N.C
	3	OPSEL2	O	0/3.3 V DC	Paper feeder select signal
	4	OPSEL1	O	0/3.3 V DC	Paper feeder select signal
	5	OPSEL0	O	0/3.3 V DC	Paper feeder select signal
	6	GND	-	-	Ground
	7	GND	-	-	Ground
	8	OPSDO	O	0/3.3 V DC (pulse)	Paper feeder serial communication data signal output
	9	OPSDI	I	0/3.3 V DC (pulse)	Paper feeder serial communication data signal input
	10	OPRDYN	I	0/3.3 V DC	Paper feeder ready signal
	11	OPSCLK	O	0/3.3 V DC (pulse)	Paper feeder clock signal
	12	+24V3	O	24 V DC	24 V DC power output
<b>YC20</b>	1	STDUPB1	O	0/24 V DC (pulse)	Duplex exit motor B1 drive control signal
	2	STDUPB3	O	0/24 V DC (pulse)	Duplex exit motor B3 drive control signal
	3	STDUPA3	O	0/24 V DC (pulse)	Duplex exit motor A3 drive control signal
	4	STDUPA1	O	0/24 V DC (pulse)	Duplex exit motor A1 drive control signal
	5	STFUSBN	O	0/24 V DC (pulse)	Fuser motor BN drive control signal
	6	STFUSAN	O	0/24 V DC (pulse)	Fuser motor AN drive control signal
	7	STFUSB	O	0/24 V DC (pulse)	Fuser motor B drive control signal
	8	STFUSA	O	0/24 V DC (pulse)	Fuser motor A drive control signal

Connector	Pin	Signal	I/O	Voltage	Description
YC21	1	+24V1	O	24 V DC	24 V DC power output
	2	LSUKMFANDRN	O	0/24 V DC	LSU fan motor 1: On/Off
YC22 (35/40 ppm model)	1	+24V1	O	24 V DC	24 V DC power output
	2	IMGFANDRN	O	0/24 V DC	Transfer fan motor: On/Off
YC23	1	+24V1	O	24 V DC	24 V DC power output
	2	LSUCYFANDRN	O	0/24 V DC	LSU fan motor 2: On/Off
YC24	1	+24V1	O	24 V DC	24 V DC power output
	2	TCONTFANDRN	O	0/24 V DC	Container fan motor: On/Off
YC25	1	LIFTMTB	O	0/24 V DC	Lift motor B drive control signal
	2	LIFTMTA	O	0/24 V DC	Lift motor A drive control signal
YC26	1	LSUMTB	O	0/24 V DC	LSU cleaning motor B drive control signal
	2	LSUMTA	O	0/24 V DC	LSU cleaning motor A drive control signal
YC27*1 (35/40 ppm model)	1	+24V3	O	24 V DC	24 V DC power output
	2	EXITFANDRN	O	0/24 V DC	Exit fan motor: On/Off
YC28*2 (40 ppm model)	1	+24V1	O	24 V DC	24 V DC power output
	2	UFPFANDRN	O	0/24 V DC	Duplex fan motor: On/Off

\*1: 35/40 ppm model only

\*2: 40 ppm model only

**(3) High-voltage PWB**  
**(3-1) PWB photograph**  
30/35 ppm model

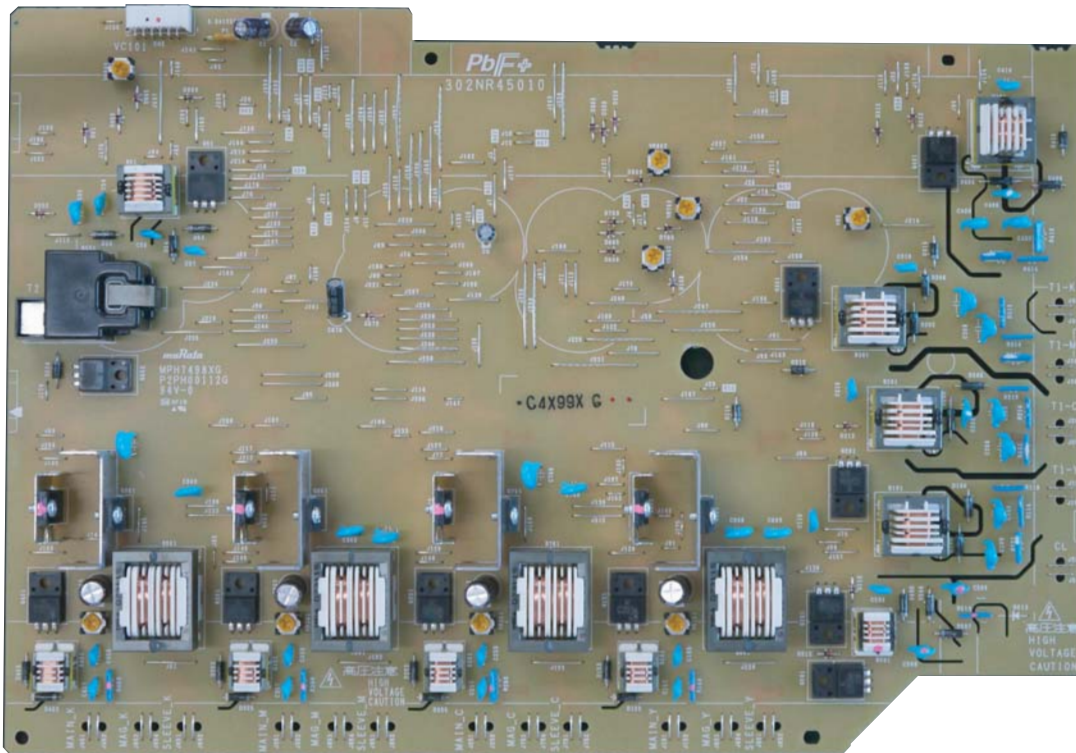


Figure 8-21

40 ppm model

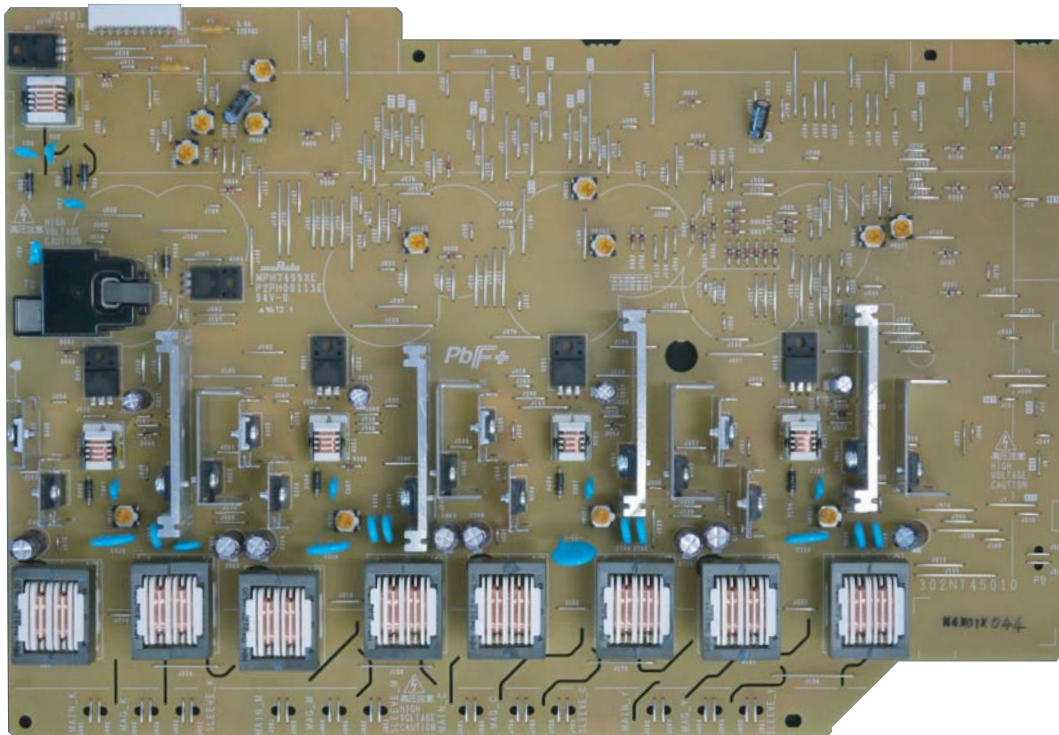
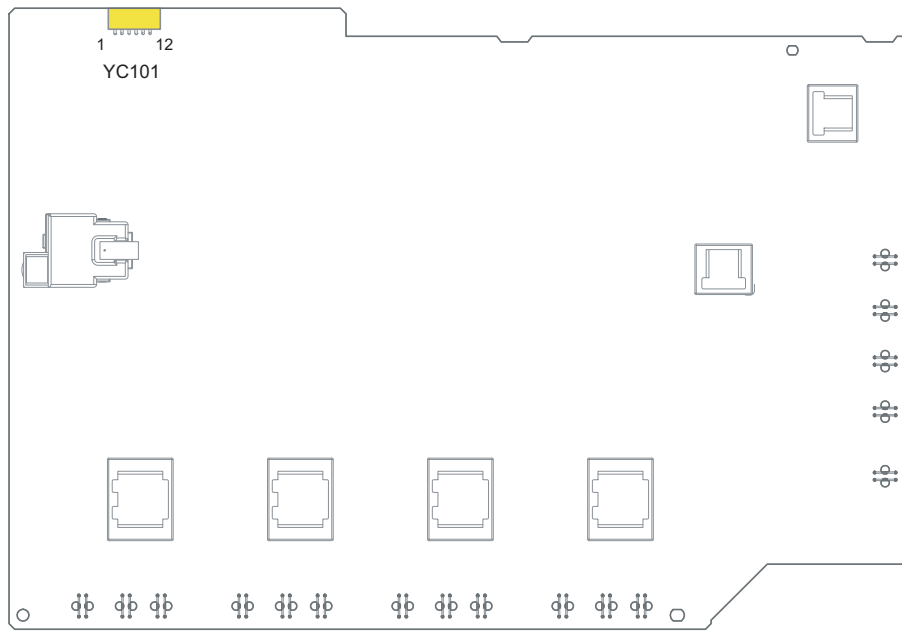


Figure 8-22

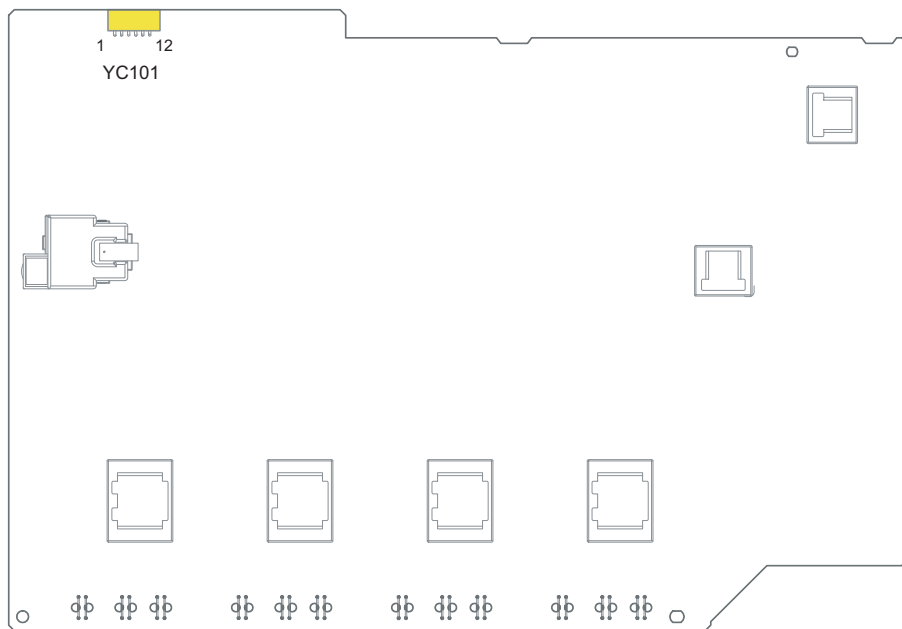
**(3-2) Connector position**

30/35 ppm model



**Figure 8-23**

40 ppm model



**Figure 8-24**

### (3-3) Connector lists

#### Connector access point

YC10: Main/engine PWB

Connector	Pin	Signal	I/O	Voltage	Description
YC101	1	+24V3_IL	I	24 V DC	24 V DC power input
	2	+24V3_IL	I	24 V DC	24 V DC power input
	3	DACSLD1	I	0/3.3 V DC	DAC1 load signal
	4	DACSLD2	I	0/3.3 V DC	DAC2 load signal
	5	DACSCLK	I	0/3.3 V DC (pulse)	DAC clock signal
	6	GND	-	-	Ground
	7	DACSDO	I/O	0/3.3 V DC (pulse)	DAC data signal
	8	HVREMN	I	0/3.3 V DC	Primary/Secondary transfer remote signal
	9	HVCLKK	I	0/3.3 V DC (pulse)	Developer (K) clock signal
	10	MKISENS	O	Analog	Main charger (K) current detecting output
	11	GND	-	-	Ground
	12	GND	-	-	Ground
	13*	HVCLKY	I	0/3.3 V DC (pulse)	Developer (Y) clock signal
	14*	HVCLKM	I	0/3.3 V DC (pulse)	Developer (M) clock signal
	15*	HVCLKC	I	0/3.3 V DC (pulse)	Developer (C) clock signal
	16*	MCHGCLK	I	0/3.3 V DC (pulse)	Main charger clock signal
	17*	MYISENS	O	Analog	Main charger (Y) current detecting output
	18*	MMISENS	O	Analog	Main charger (M) current detecting output
	19*	MCISENS	O	Analog	Main charger (C) current detecting output

\*: 40 ppm model only

#### (4) High-voltage PWB 2

\*: 40 ppm model only

##### (4-1) PWB photograph

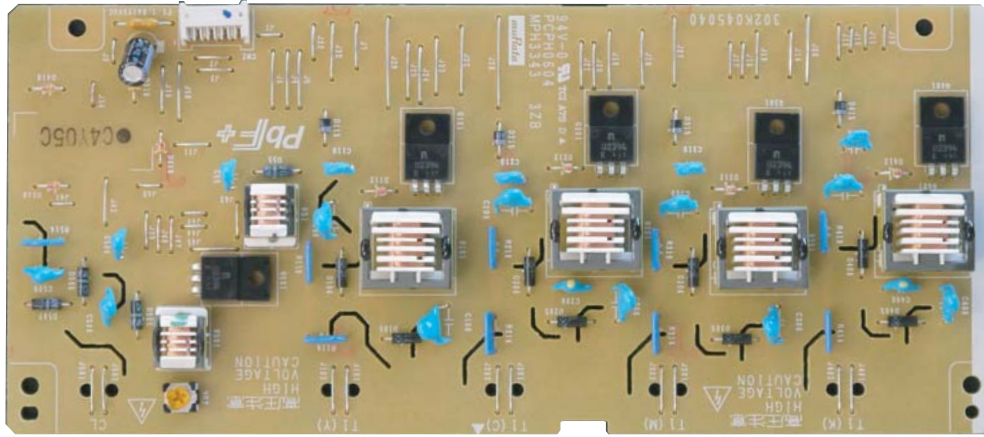


Figure 8-25

##### (4-2) Connector position

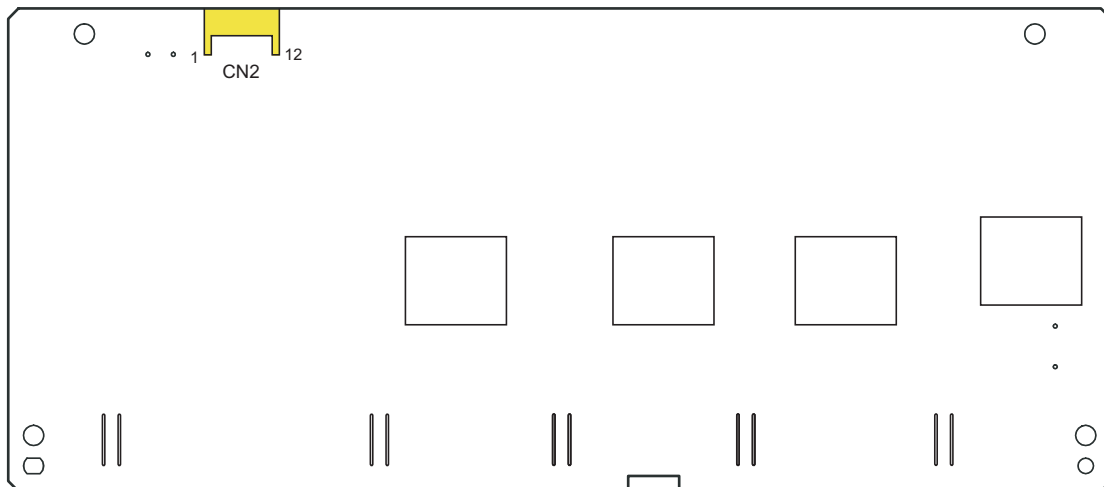


Figure 8-26



**(4-3) Connector lists**

**Connector access point**

CN2: Main/Engine PWB

Connector	Pin	Signal	I/O	Voltage	Description
CN2	1	+24V3_IL	I	24 V DC	24 V DC power input
	2	T1MCNT	I	+3.3V Analog	Primary transfer DC output control signal (M)
	3	T1YCNT	I	+3.3V Analog	Primary transfer DC output control signal (Y)
	4	HVREM	I	0/3.3 V DC	Primary transfer (reverse) output OFF/ON signal
	5	CLCNT	I	+3.3V Analog	Cleaning DC output control signal
	6	T1CCNT	I	+3.3V Analog	Primary transfer DC output control signal (C)
	7	T1KCNT	I	+3.3V Analog	Primary transfer DC output control signal (K)
	8	GND	-	-	Ground

(5) Power supply PWB

(5-1) PWB photograph

30 ppm model

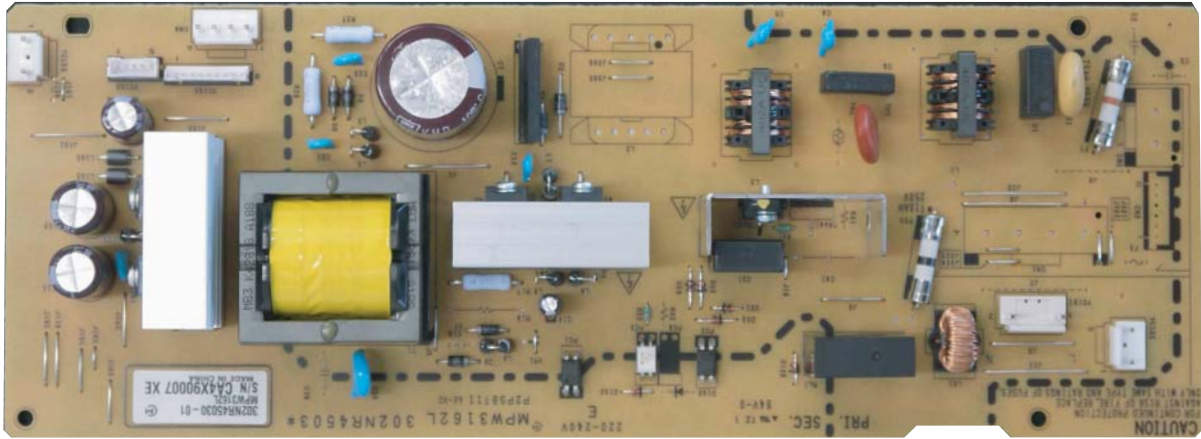


Figure 8-27

35/40 ppm model

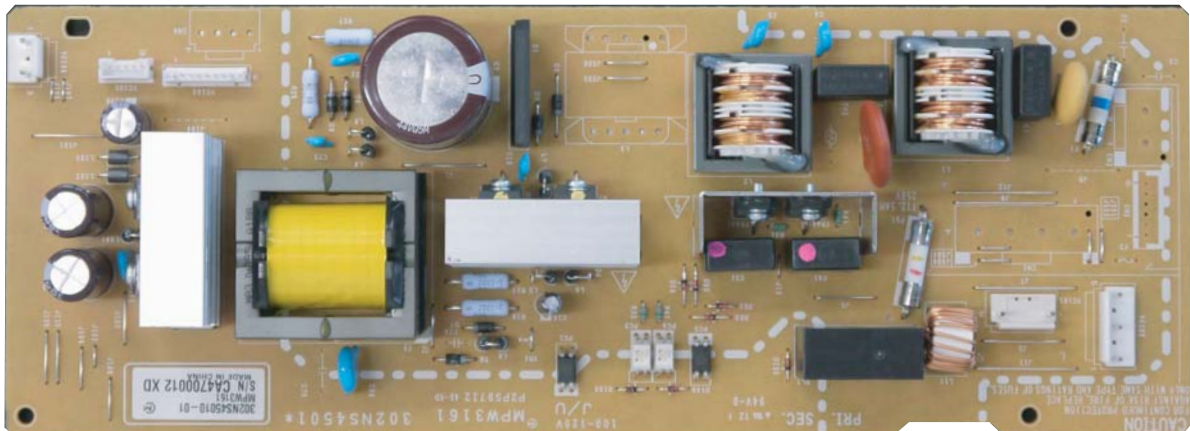


Figure 8-28

### (5-2) Connector position

30 ppm model

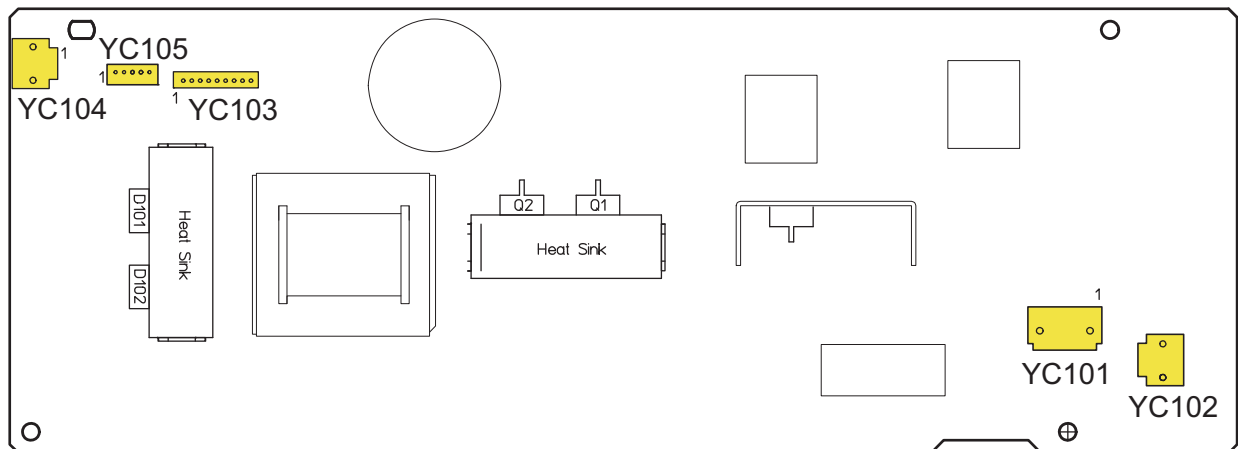


Figure 8-29

35/40 ppm model

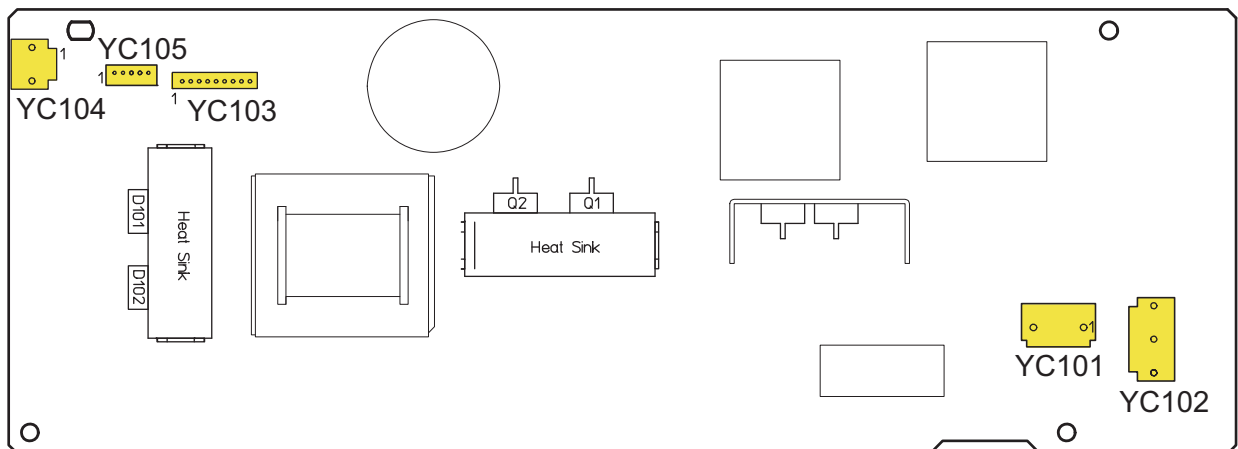


Figure 8-30

### (5-3) Connector lists

#### Connector access point

- YC101: Outlet
- YC102: Fuser unit
- YC103: Main/engine PWB
- YC104: Interlock switch
- YC105: Main/engine PWB

Connector	Pin	Signal	I/O	Voltage	Description
<b>YC101</b>	1	LIVE	I	120 V AC 220-240 V AC	AC power input
	2	NEUTRAL	I	120 V AC 220-240 V AC	AC power input
<b>YC102</b>	1	NEUTRAL1	-	120 V AC 220-240 V AC	Fuser heater 1
	3	LIVE	-	120 V AC 220-240 V AC	AC power input
	5	NEUTRAL2*1	-	120 V AC 220-240 V AC	Fuser heater 2
<b>YC103</b>	1	+24V0_IL	O	24 V DC	24 V DC power output
	2	+24V0_IL	O	24 V DC	24 V DC power output
	3	+24V0_IL	O	24 V DC	24 V DC power output
	4	GND	-	-	Ground
	5	GND	-	-	Ground
	6	GND	-	-	Ground
	7	GND	-	-	Ground
	8	+24V0	O	24 V DC	24 V DC power output
	9	+24V0	O	24 V DC	24 V DC power output
<b>YC104</b>	1	+24V0_IL	I	24 V DC	24 V DC power input from Interlock switch
	2	N.C.	-	-	Not used
	3	+24V0	O	24 V DC	24 V DC power output to Interlock switch
<b>YC105 (30 ppm model)</b>	1	HEATREM1	I	0/3.3 V DC	Fuser heater 1: On/Off
	2	RELAYON	I	0/3.3 V DC	Power relay signal: On/Off
	3	ZCROSSN	O	0/3.3 V DC (pulse)	Zero cross signal
	4	PSSLEEPN	I	0/24 V DC	Sleep mode signal: On/Off
	5	N.C.	-	-	Not used
<b>YC105 (35/40 ppm model)</b>	1	HEATREM2	I	0/3.3 V DC	Fuser heater 2: On/Off
	2	HEATREM1	I	0/3.3 V DC	Fuser heater 1: On/Off
	3	RELAYON	I	0/3.3 V DC	Power relay signal: On/Off
	4	ZCROSSN	O	0/3.3 V DC (pulse)	Zero cross signal
	5	PSSLEEPN	I	0/24 V DC	Sleep mode signal: On/Off

\*1: 35/40 ppm model only

(6) Operation panel PWB

(6-1) PWB photograph

30 ppm model

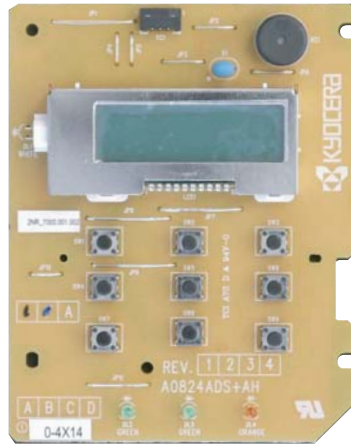


Figure 8-31

35/40 ppm model

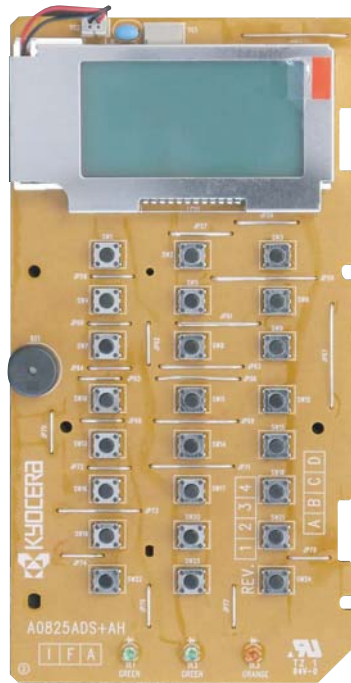
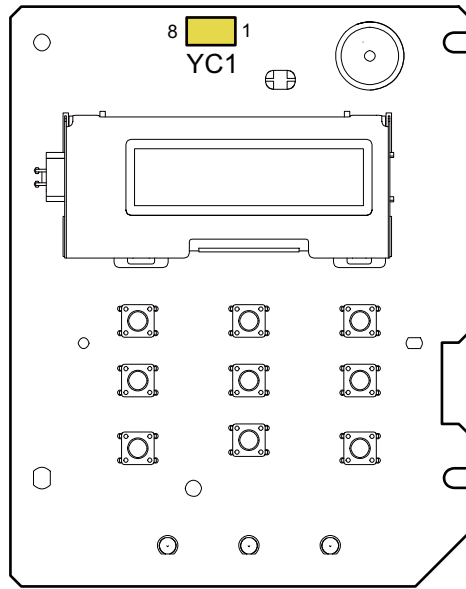


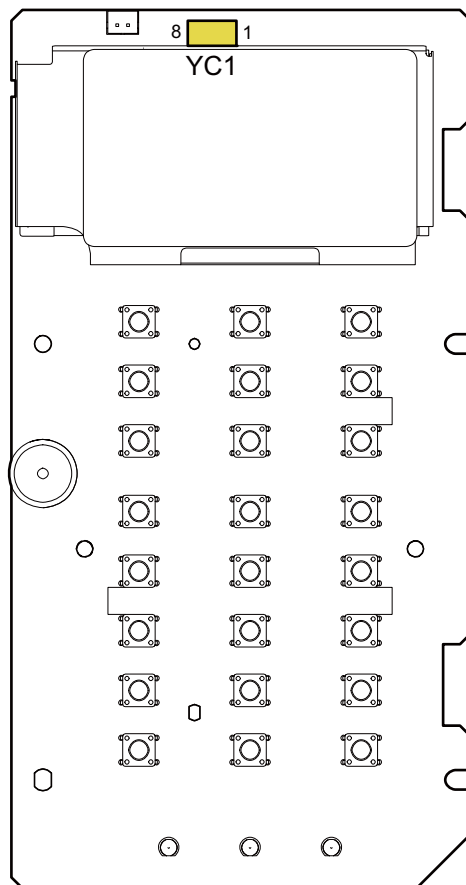
Figure 8-32

**(6-2) Connector position**  
30 ppm model



**Figure 8-33**

**35/40 ppm model**



**Figure 8-34**

**(6-3) Connector lists**

**Connector access point**

YC1: Main/engine PWB

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	+5.0V1_C1	I	5 V DC	5 V DC power output
	2	FPRSTN	O	0/3.3 V DC	Reset signal
	3	+3.3V1_C	O	3.3 V DC	3.3 V DC power output
	4	FPRXD	O	0/3.3 V DC (pulse)	Serial communication data
	5	FPTXD	I	0/3.3 V DC (pulse)	Serial communication data
	6	GND	-	-	Ground
	7	INT_OKKEY_N	O	0/3.3 V DC	OK/GO key return notification signal
	8	INT_ME- NUKEY_N	O	0/3.3 V DC	MENU key return notification signal

## (7) Drum relay PWB

### (7-1) PWB photograph



Figure 8-35

### (7-2) Connector position

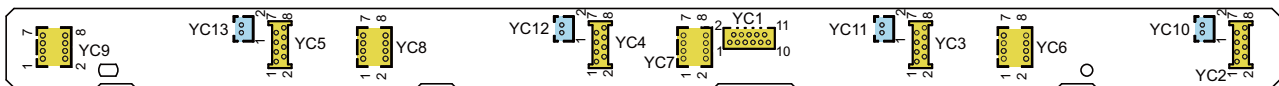


Figure 8-36

### (7-3) Connector lists

#### Connector access point

- YC1: Main/engine PWB
- YC2: Drum PWB K
- YC3: Drum PWB M
- YC4: Drum PWB C
- YC5: Drum PWB Y
- YC6: Developer PWB K
- YC7: Developer PWB M
- YC8: Developer PWB C
- YC9: Developer PWB Y
- YC10: Drum heater PWB K \*1
- YC11: Drum heater PWB M \*1
- YC12: Drum heater PWB C \*1
- YC13: Drum heater PWB Y \*1

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	GND	-	-	Ground
	2	PTSCL	I	0/3.3 V DC (pulse)	E2PROM communication clock signal
	3	+3.3V3_E	I	3.3 V DC	3.3 V DC power output
	4	PTSDA	I/O	0/3.3 V DC (pulse)	E2PROM communication data signal
	5	TNSENC	O	Analog	Toner sensor remaining level signal (C)
	6	TNSENY	O	Analog	Toner sensor remaining level signal (Y)
	7	TNSENK	O	Analog	Toner sensor remaining level signal (K)
	8	TNSENM	O	Analog	Toner sensor remaining level signal (M)



Connector	Pin	Signal	I/O	Voltage	Description
YC1	9	DRMHEATDR	I	24 V DC	24 V DC power output
	10	DLP THERM	O	Analog	Developer thermistor
	11	ERASE	I	24 V DC	Eraser ON signal
YC2	1	GND	-	-	Ground
	2	PT SCL	O	0/3.3 V DC (pulse)	EEPROM clock signal
	3	ERASEK	O	0/24 V DC	Eraser K: On/Off
	4	PT SDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C	-	-	-
	6	+3.3V3	O	3.3 V DC	3.3 V DC power output
	7	DA0	O	3.3 V DC	3.3 V DC power output
	8	DA1	O	3.3 V DC	3.3 V DC power output
YC3	1	GND	-	-	Ground
	2	PT SCL	O	0/3.3 V DC (pulse)	EEPROM clock signal
	3	ERASECOL	O	0/24 V DC	Eraser M: On/Off
	4	PT SDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C	-	-	-
	6	3.3V3	O	3.3 V DC	3.3 V DC power output
	7	DA0	O	3.3 V DC	3.3 V DC power output
	8	DA1	-	-	Ground
YC4	1	GND	-	-	Ground
	2	PT SCL	O	0/3.3 V DC (pulse)	EEPROM clock signal
	3	ERASECOL	O	0/24 V DC	Eraser C: On/Off
	4	PT SDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C	-	-	-
	6	3.3V3	O	3.3 V DC	3.3 V DC power output
	7	DA0	-	-	Ground
	8	DA1	O	3.3 V DC	3.3 V DC power output
YC5	1	GND	-	-	Ground
	2	PT SCL	O	0/3.3 V DC (pulse)	EEPROM clock signal
	3	ERASEYDR	O	0/24 V DC	Eraser Y: On/Off
	4	PT SDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	5	N.C	-	-	-
	6	3.3V3	O	3.3 V DC	3.3 V DC power output
	7	DA0	-	-	Ground
	8	DA1	-	-	Ground
YC6	1	GND	-	-	Ground
	2	+3.3V3	O	3.3 V DC	3.3 V DC power output

Connector	Pin	Signal	I/O	Voltage	Description
<b>YC6</b>	3	TNSENK	I	Analog	Toner sensor K detecting signal
	4	PTSCL	O	0/3.3 V DC (pulse)	EEPROM clock signal
	5	DLPTH	I	Analog	Developer thermistor (K) output
	6	PTSDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	7	DA0	-	-	Ground
	8	DA1	-	-	Ground
<b>YC7</b>	1	GND	-	-	Ground
	2	+3.3V3	O	3.3 V DC	3.3 V DC power output
	3	TNSENK	I	Analog	Toner sensor M detecting signal
	4	PTSCL	O	0/3.3 V DC (pulse)	EEPROM clock signal
	5	N.C	-	-	-
	6	PTSDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	7	DA0	-	-	Ground
	8	DA1	O	3.3 V DC	3.3 V DC power output
<b>YC8</b>	1	GND	-	-	Ground
	2	+3.3V3	O	3.3 V DC	3.3 V DC power output
	3	TNSENK	I	Analog	Toner sensor C detecting signal
	4	PTSCL	O	0/3.3 V DC (pulse)	EEPROM clock signal
	5	N.C	-	-	-
	6	PTSDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	7	DA0	O	3.3 V DC	3.3 V DC power output
	8	DA1	-	-	Ground
<b>YC9</b>	1	GND	-	-	Ground
	2	+3.3V3	O	3.3 V DC	3.3 V DC power output
	3	TNSENK	I	Analog	Toner sensor Y detecting signal
	4	PTSCL	O	0/3.3 V DC (pulse)	EEPROM clock signal
	5	N.C	-	-	-
	6	PTSDA	I/O	0/3.3 V DC (pulse)	EEPROM data signal
	7	DA0	O	3.3 V DC	3.3 V DC power output
	8	DA1	O	3.3 V DC	3.3 V DC power output
<b>YC10*1</b>	1	HEATDRK	I	0/24 V DC	Drum heater (K) drive signal: On/Off
	2	GND	-	-	Ground
<b>YC11*1</b>	1	HEATDRM	I	0/24 V DC	Drum heater (M) drive signal: On/Off
	2	GND	-	-	Ground
<b>YC12*1</b>	1	HEATDRC	I	0/24 V DC	Drum heater (C) drive signal: On/Off
	2	GND	-	-	Ground

Connector	Pin	Signal	I/O	Voltage	Description
YC13*1	1	HEATDRY	I	0/24 V DC	Drum heater (Y) drive signal: On/Off
	2	GND	-	-	Ground

\*1: 40 ppm model only

## 8-2 Description for PWB (Option)

### (1) PF main PWB (PF-5100)

#### (1-1) PWB photograph

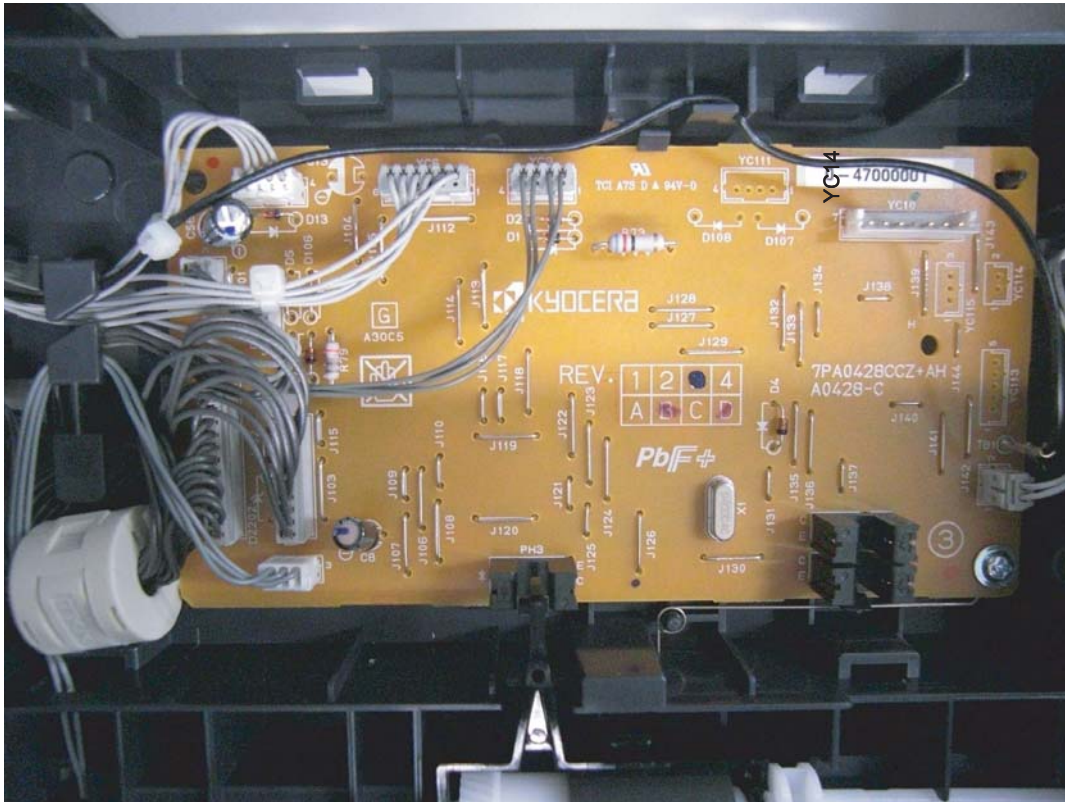


Figure 8-37

#### (1-2) Connector position

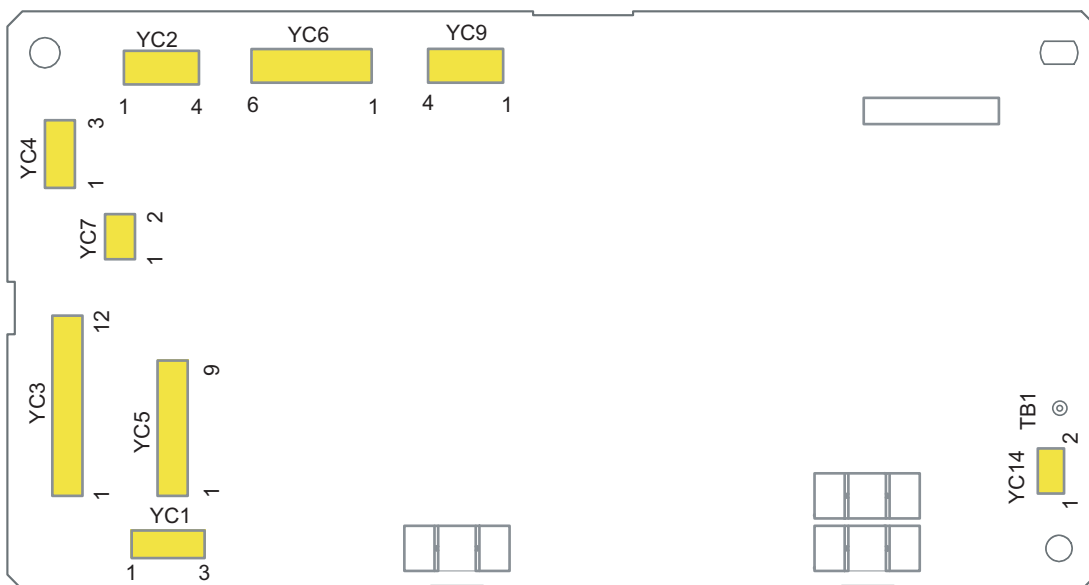


Figure 8-38

### (1-3) Connector lists

#### Connector access point

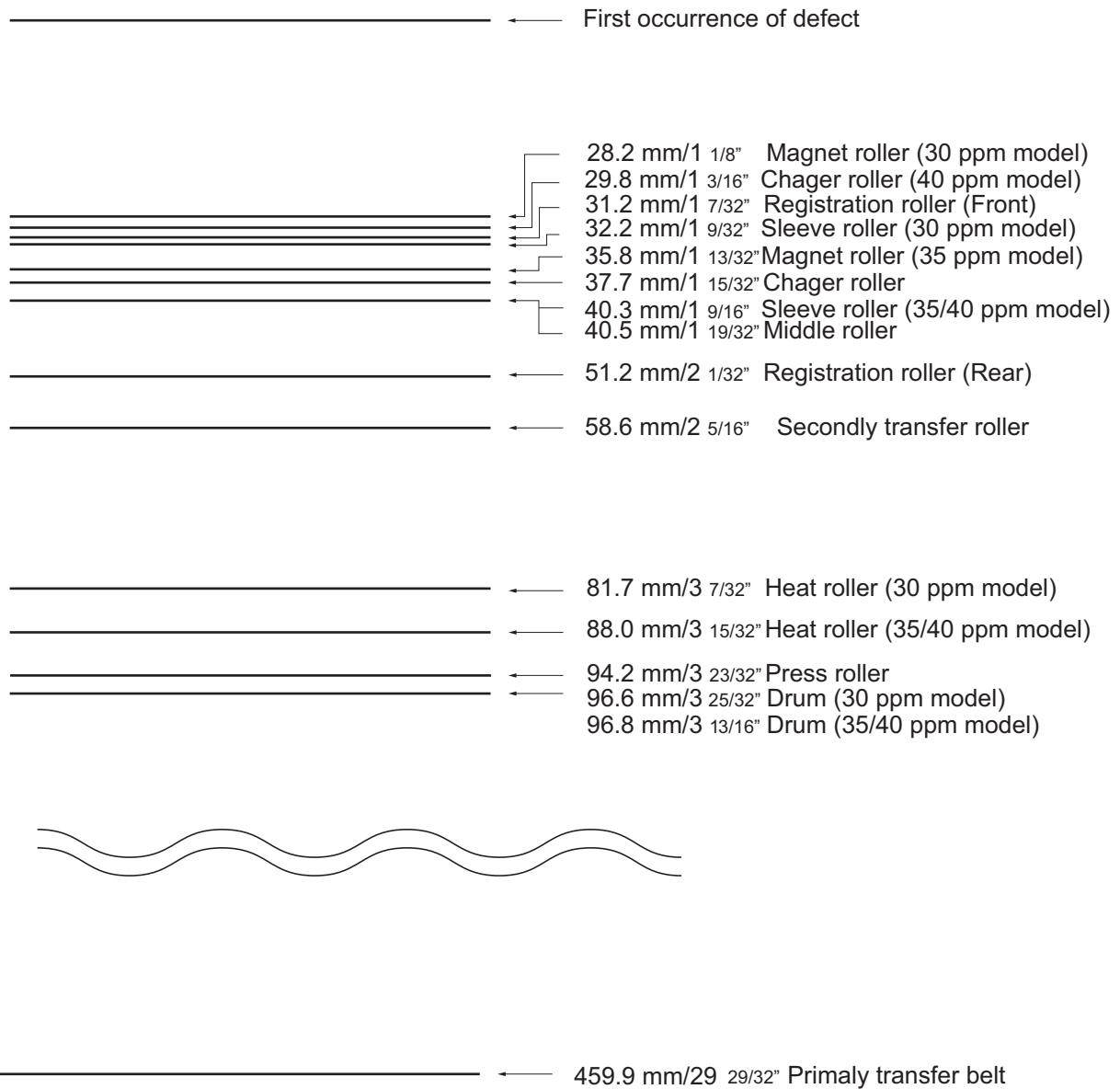
- YC1: PF feed sensor
- YC2: PF cassette size switch
- YC3: Interface connector
- YC4: Interface connector
- YC5: Interface connector
- YC6: PF paper feed motor
- YC7: PF lift motor
- YC9: PF paper feed clutch, PF conveying clutch
- YC14: PF rear cover switch

Connector	Pin	Signal	I/O	Voltage	Description
YC1	1	+3.3V	O	3.3 V DC	3.3 V DC power output
	2	GND	-	-	Ground
	3	OUT	I	0/3.3 V DC	PF feed sensor: On/Off
YC2	1	PAPSIZE0	I	0/3.3 V DC	PF cassette size switch: On/Off
	2	PAPSIZE1	I	0/3.3 V DC	PF cassette size switch: On/Off
	3	GND	-	-	Ground
	4	PAPSIZE2	I	0/3.3 V DC	PF cassette size switch: On/Off
YC3	1	GND	-	-	Ground
	2	OPSCLK	I	0/3.3 V DC (pulse)	Serial communication clock signal
	3	OPRDYN	O	0/3.3 V DC	Ready signal
	4	OPSDI	O	0/3.3 V DC (pulse)	Serial communication data signal
	5	OPSDO	I	0/3.3 V DC (pulse)	Serial communication data signal
	6	+3.3V	I	0/3.3 V DC	3.3 V DC power
	7	GND	-	-	Ground
	8	OPSEL0	I	0/3.3 V DC	Paper feeder select signal
	9	OPSEL1	I	0/3.3 V DC	Paper feeder select signal
	10	OPSEL2	I	0/3.3 V DC	Paper feeder select signal
	11	PAPSIZE	O	0/3.3 V DC	PF cassette size switch: On/Off
YC4	1	+24V	O	24 V DC	24 V DC power
	2	PAPSIZE	I	0/3.3 V DC	PF cassette size switch: On/Off
	3	GND	-	-	Ground
YC5	1	GND	-	-	Ground
	2	OPSCLK	O	0/3.3 V DC (pulse)	Serial communication clock signal
	3	OPRDYN	I	0/3.3 V DC	Ready signal
	4	OPSDI	I	0/3.3 V DC (pulse)	Serial communication data signal
	5	OPSDO	O	0/3.3 V DC (pulse)	Serial communication data signal
	6	+3.3V	O	0/3.3 V DC	3.3 V DC power
	7	OPSEL1	O	0/3.3 V DC	Paper feeder select signal

Connector	Pin	Signal	I/O	Voltage	Description
<b>YC5</b>	8	OPSEL2	O	0/3.3 V DC	Paper feeder select signal
	9	OPSEL0	O	0/3.3 V DC	Paper feeder select signal
<b>YC6</b>	1	TMDIR	O	0/3.3 V DC	PF feed motor control signal
	2	TMLOCK	I	0/3.3 V DC	PF feed motor lock signal
	3	TMCLK	O	0/3.3 V DC (pulse)	PF feed motor clock signal
	4	#TMDRY	O	0/3.3 V DC	PF feed motor: On/Off
	5	GND	-	-	Ground
	6	+24V	O	24 V DC	24 V DC power
<b>YC7</b>	1	LMOT+	O	24/0/0 V DC	PF lift motor: forward/-/Off
	2	LMOT-	O	0/24/0 V DC	PF lift motor: -/reverse/Off
<b>YC9</b>	1	TRANSCLN	O	0/24 V DC	PF conveying clutch: On/Off
	2	+24V	O	24 V DC	24 V DC power
	3	FEEDCLN	O	0/24 V DC	PF feed clutch: On/Off
	4	+24V	O	24 V DC	24 V DC power
<b>YC14</b>	1	COV_SW	O	0/3.3 V DC	PF rear cover switch: On/Off
	2	GND	O	-	Ground

## 9 Appendixes

### 9-1 Repetitive defects gauge



\*: The repetitive marks interval may vary depending on operating conditions.

## 9-2 Firmware environment commands

The printer maintains a number of printing parameters in its memory. These parameters may be changed permanently with the FRPO (Firmware RePrOgram) commands.

This section provides information on how to use the FRPO command and its parameters using examples.

### Using FRPO commands for reprogramming the firmware

The current settings of the FRPO parameters are listed as the optional values on the service status page.

Note: Before changing any FRPO parameters, print out a service status page, so you will know the parameter values before the changes are made. To return FRPO parameters to their factory default values, send the FRPO INIT (FRPO-INITialize) command.(!R! FRPO INIT; EXIT;)

The FRPO command is sent to the printer in the following sequence:

!R! FRPO parameter, value; EXIT;

Example: Changing emulation mode to PC-PR201/65A

!R! FRPO P1, 11; EXIT;

### FRPO parameters

Item	FRPO	Setting values	Factory setting
Default pattern resolution	B8	0: 300 dpi 1: 600 dpi	0
Copy count	C0	Number of copies to print:1-999	1
Page orientation	C1	0: Portrait 1: Landscape	0
Default font No.	C2 C3 C5	Middle two digits of power-up font Last two digits of power-up font First two digits of power-up font	0 0 0
PCL font switch	C8	0:HP compatibility mode (Characters higher than 127 are not printed.) 32:Conventional mode (Characters higher than 127 are printed. Supported symbol sets: ISO-60 Norway [00D], ISO-15 Italian [00I], ISO-11 Sweden [00S], ISO-6 ASCII [00U], ISO-4 U.K. [01E], ISO-69 France [01F], ISO-21 Germany [01G], ISO-17 Spain [02S], Symbol [19M])	0
Total host buffer size	H8	0 to 99 in units of the size defined by FRPO S5	5
Form feed time-out value	H9	Value in units of 5 seconds (0 to 99).	6
Duplex binding	N4	0: Off 1: Long edge 2: Short edge	0
Sleep timer time-out time	N5	1 to 240 minutes [0: Off]	1



Item	FRPO	Setting values	Factory setting
Ecoprint level	N6	0: Off 2: On	0
Default emulation mode	P1	6 : PCL6 (except PCL XL) 9 : KPDL	9(U.S.A) or 6(Euro and other)
Carriage-return action *	P2	0: Ignores 0x0d 1: Carriage-return 2: Carriage-return+linefeed	1
Linefeed action *	P3	0: Ignores 0x0d 1: Linefeed 2: Linefeed+carriage-return	1
Automatic emulation sensing (For KPDL3)	P4	0: AES disabled 1: AES enabled	1(U.S.A) or 0(Euro and other)
Automatic emulation switching trigger (For KPDL3)	P7	0: Page eject commands 1: None 2: Page eject and PRESCRIBE EXIT 3: PRESCRIBE EXIT 4: Formfeed (^L) 6: Page eject, PRESCRIBE EXIT and formfeed 10: Page eject commands; if AES fails, resolves to KPDL	11(U.S.A) or 10(Euro and other)
Command recognition character	P9	ASCII code of 33 to 126	82 (R)

Item	FRPO	Setting values	Factory setting
Default paper size	R2	0: Size of the default paper cassette (See R4.) 1: Monarch (3-7/8 × 7-1/2 inches) 2: Business (4-1/8 × 9-1/2 inches) 3: International DL (11 × 22 cm) 4: International C5 (16.2 × 22.9 cm) 5: Executive (7-1/4 × 10-1/2 inches) 6: US Letter (8-1/2 × 11 inches) 7: US Legal (8-1/2 × 14 inches) 8: A4 (21.0 × 29.7 cm) 9: JIS B5 (18.2 × 25.7 cm) 13: ISO A5 14: A6 (10.5 × 14.8 cm) 15: JIS B6 (12.8 × 18.2 cm) 16: Commercial #9 (3-7/8 × 8-7/8 inches) 17: Commercial #6 (3-5/8 × 6-1/2 inches) 18: ISO B5 (17.6 × 25 cm) 19: Custom (11.7 × 17.7 inches) 31: Hagaki (10 × 14.8 cm) 32: Ofuku-hagaki (14.8 × 20 cm) 33: Officio II 40: 16K 42: 216x340 50: Statement 51: Folio 52: Youkei 2 53: Youkei 4	0
Default cassette	R4	0: MP tray 1: Cassette 1 2: Cassette 2 3: Cassette 3 4: Cassette 4	1
MP tray paper size	R7	Same as the R2 values except: 0	6 (U.S.A) or 8 (Euro and other)
A4/letter equation	S4	0: Off 1: On	1
Host buffer size	S5	0: 10kB (x H8) 1: 100kB (x H8) 2: 1024kB (x H8)	1
RAM disk size	S6	1 to 1024 MB	128
RAM disk mode	S7	0: Off 1: On	1

Item	FRPO	Setting values	Factory setting
Wide A4	T6	0: Off 1: On	0
Line spacing	U0	Lines per inch (integer value)	6
Line spacing	U1	Lines per inch (fraction value)	0
Character spacing	U2	Characters per inch (integer value)	10
Character spacing	U3	Characters per inch (fraction value)	0
Country code	U6	0: US-ASCII 1: France 2: Germany 3: UK 4: Denmark 5: Sweden 6: Italy 7: Spain 8: Japan 9: US Legal 10: IBM PC-850 (Multilingual) 11: IBM PC-860 (Portuguese) 12: IBM PC-863 (Canadian French) 13: IBM PC-865 (Norwegian) 14: Norway 15: Denmark 2 16: Spain 2 17: Latin America 21: US ASCII (U7 = 50 SET) 77: HP Roman-8 (U7 = 52 SET)	41
Code set at power up in daisy-wheel emulation	U7	0: Same as the default emulation mode (P1) 1: IBM 6: IBM PC-8 50: US ASCII (U6 = 21 SET) 52: HP Roman-8 (U6 = 77 SET)	53
Font pitch for fixed pitch scalable font	U8	Integer value in cpi: 0 to 99	10
	U9	Fraction value in 1/100 cpi: 0 to 99	0

Item	FRPO	Setting values	Factory setting
Font height for the default scalable font	V0	Integer value in 100 points: 0 to 9	0
	V1	Integer value in points: 0 to 99	12
	V2	Fraction value in 1/100 points: 0, 25, 50, 75	0
Default scalable font	V3	Name of typeface of up to 32 characters, enclosed with single or double quotation marks	Courier
Default weight (courier and letter Gothic)	V9	0: Courier = darkness Letter Gothic = darkness 1: Courier = regular Letter Gothic = darkness 4: Courier = darkness Letter Gothic = regular 5: Courier = regular Letter Gothic = regular	5
Color mode	W1	0: Monochrome 1: Color (CMYK color)	1
Gloss mode	W6	0: Low (Normal Print) 1: High	0
Paper type for the MP tray	X0	1: Plain 1 2: Transparency 3: Preprinted 4: Label 5: Bond 6: Recycle 7: Vellum 8: Rough 9: Letterhead 10: Color 11: Prepunched 12: Envelope 13: Cardstock 14: Coated 16: Thick 17: High quality 21: Custom1 22: Custom2 23: Custom3 24: Custom4 25: Custom5 26: Custom6 27: Custom7 28: Custom8	1

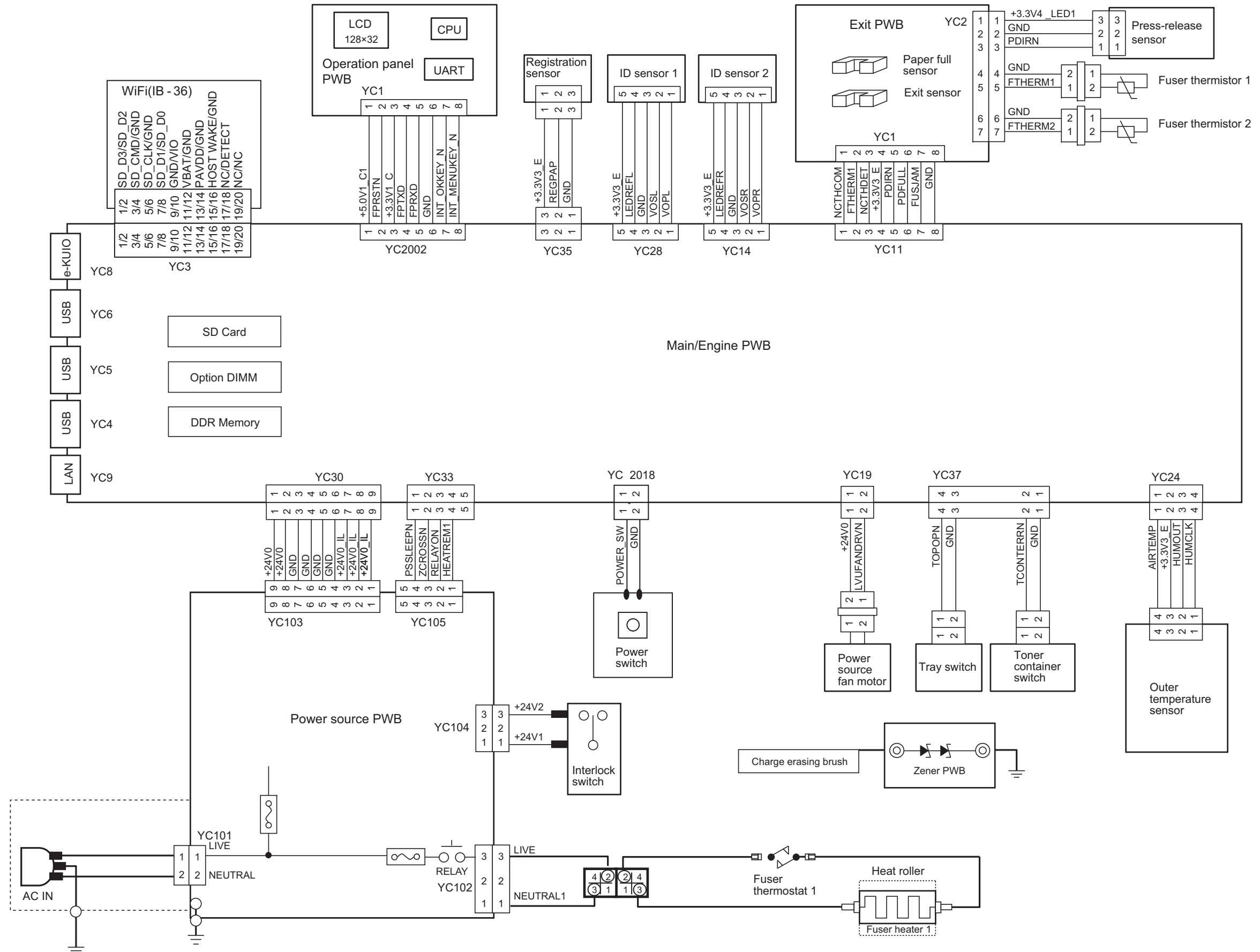
Item	FRPO	Setting values	Factory setting
Paper type for paper cassettes 1	X1	1: Plain 3: Preprinted 5: Bond 6: Recycled 7: Vellum 8: Rough 9: Letterhead 10: Color 11: Prepunched 16: Thick 17: High quality 21: Custom1 22: Custom2 23: Custom3 24: Custom4 25: Custom5 26: Custom6 27: Custom7 28: Custom8	1
Paper type for paper cassettes 2 to 4	X2 X3 X4	1: Plain 3: Preprinted 4: Label 5: Bond 6: Recycled 7: Vellum 8: Rough 9: Letterhead 10: Color 11: Prepunched 12: Envelope 14: Coated 16: Thick 17: High quality 21: Custom1 22: Custom2 23: Custom3 24: Custom4 25: Custom5 26: Custom6 27: Custom7 28: Custom8	1
PCL paper source	X9	0: Paper selection depending on an escape sequence compatible with HP-LJ5Si. 2: Paper selection depending on an escape sequence compatible with HP-LJ8000.	0
Automatic continue for 'Press GO'	Y0	0: Off 1: On	0

Item	FRPO	Setting values	Factory setting
Automatic continue timer	Y1	Number from 0 to 99 in increments of 5 seconds	6 (30 seconds)
Error message for device error	Y3	0 to 255	0
Duplex operation for specified paper type (Prepunched, Preprinted and Letterhead)	Y4	0: Off 1: On	0
Default operation for PDF direct printing	Y5	0: Enlarges or reduces the image to fit in the current paper size. Loads paper from the current paper cassette. 1: Through the image. Loads paper which is the same size as the image. 2: Enlarges or reduces the image to fit in the current paper size. Loads Letter, A4 size paper depending on the image size. 3: Through the image. Loads Letter, A4 size paper depending on the image size. 8: Through the image. Loads paper from the current paper cassette. 9: Through the image. Loads Letter, A4 size paper depending on the image size. 10: Enlarges or reduces the image to fit in the current paper size. Loads Letter, A4 size paper depending on the image size.	0
e-MPS error	Y6	0: Does not print the error report and display the error message. 1: Prints the error report. 2: Displays the error message. 3: Prints the error report and displays the error message.	3

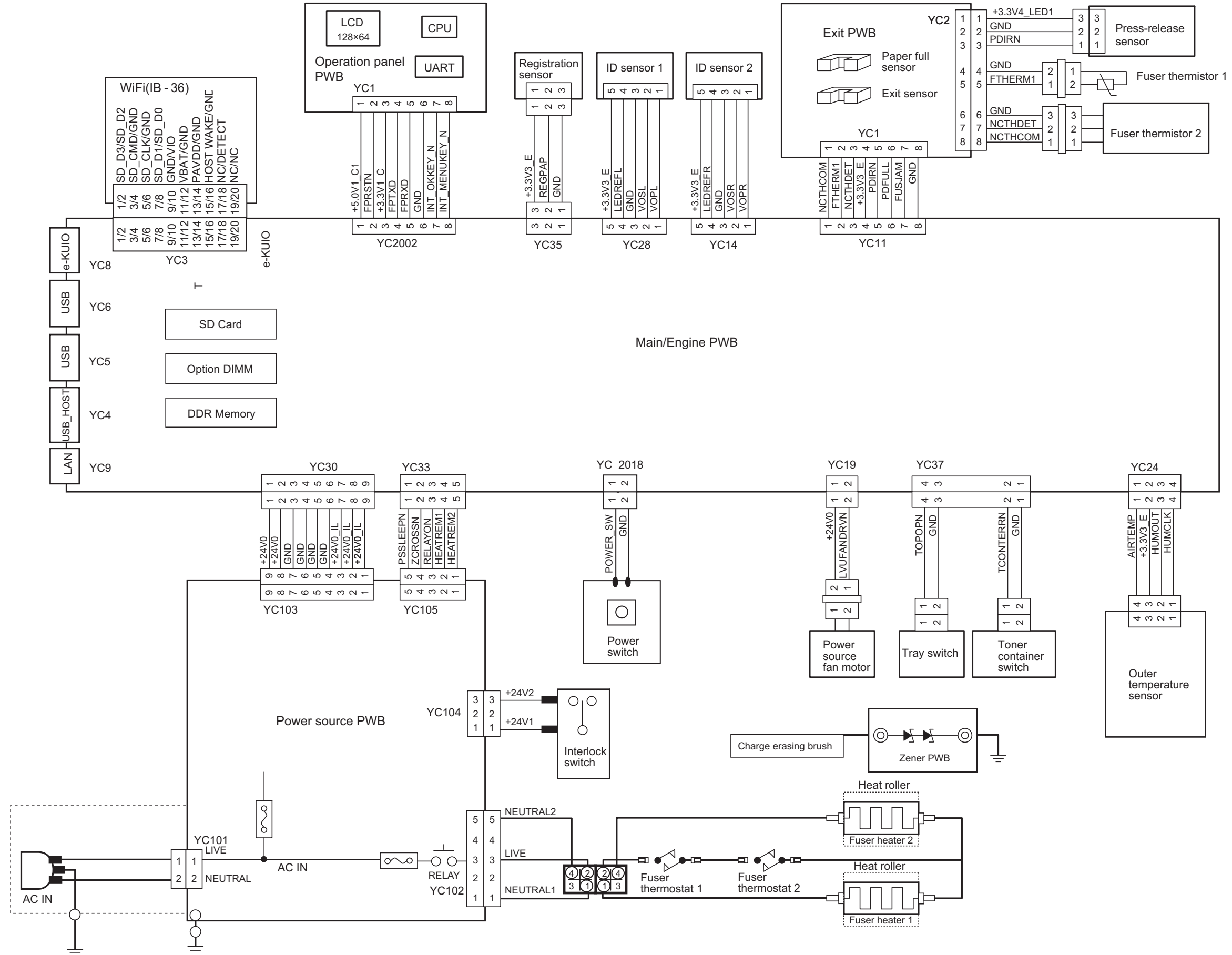
\*: Ignored depending on emulation.

# 9-3 Wiring diagram

No.1 (30 ppm model)

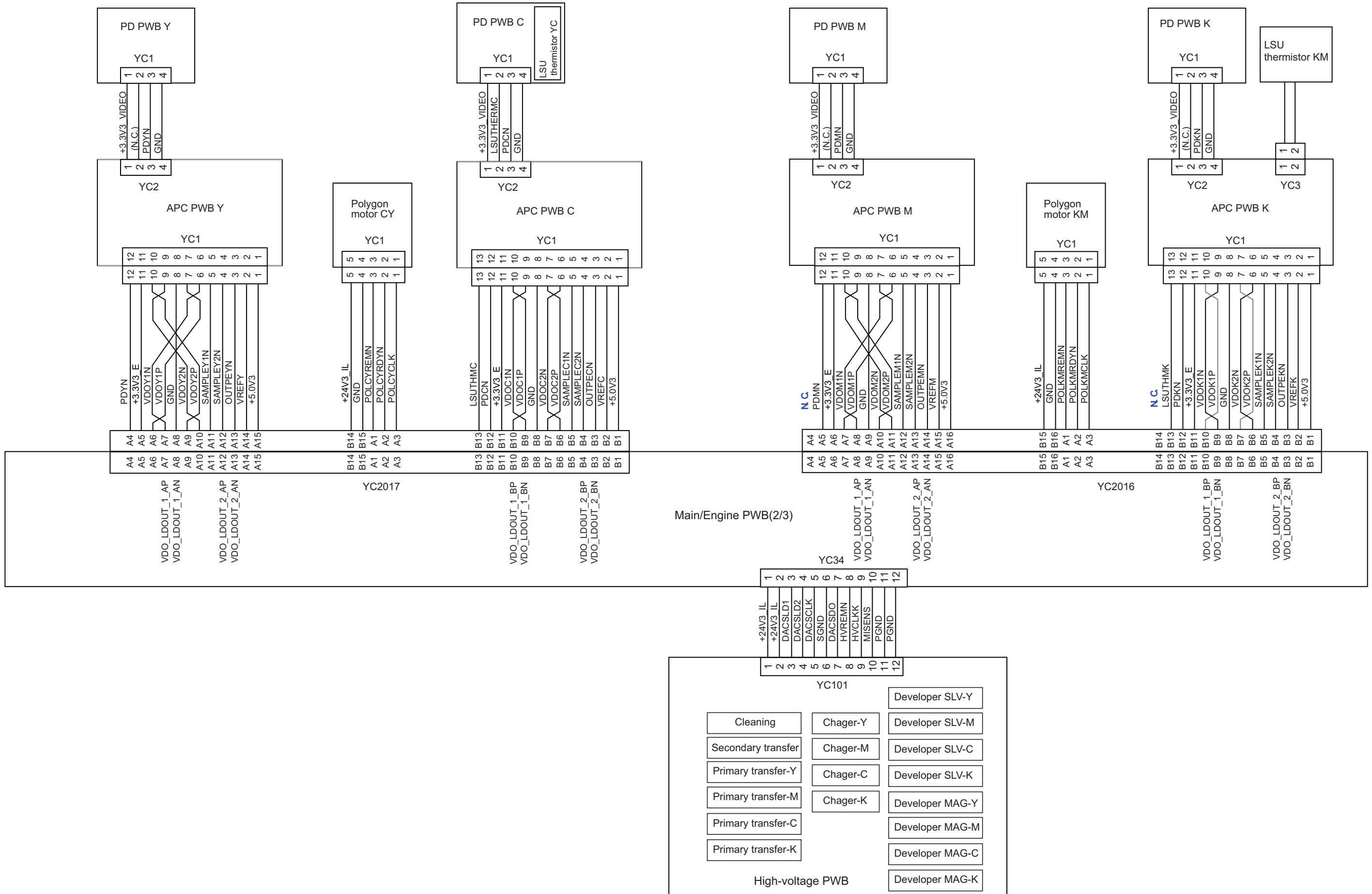


No.1 (35/40 ppm model)

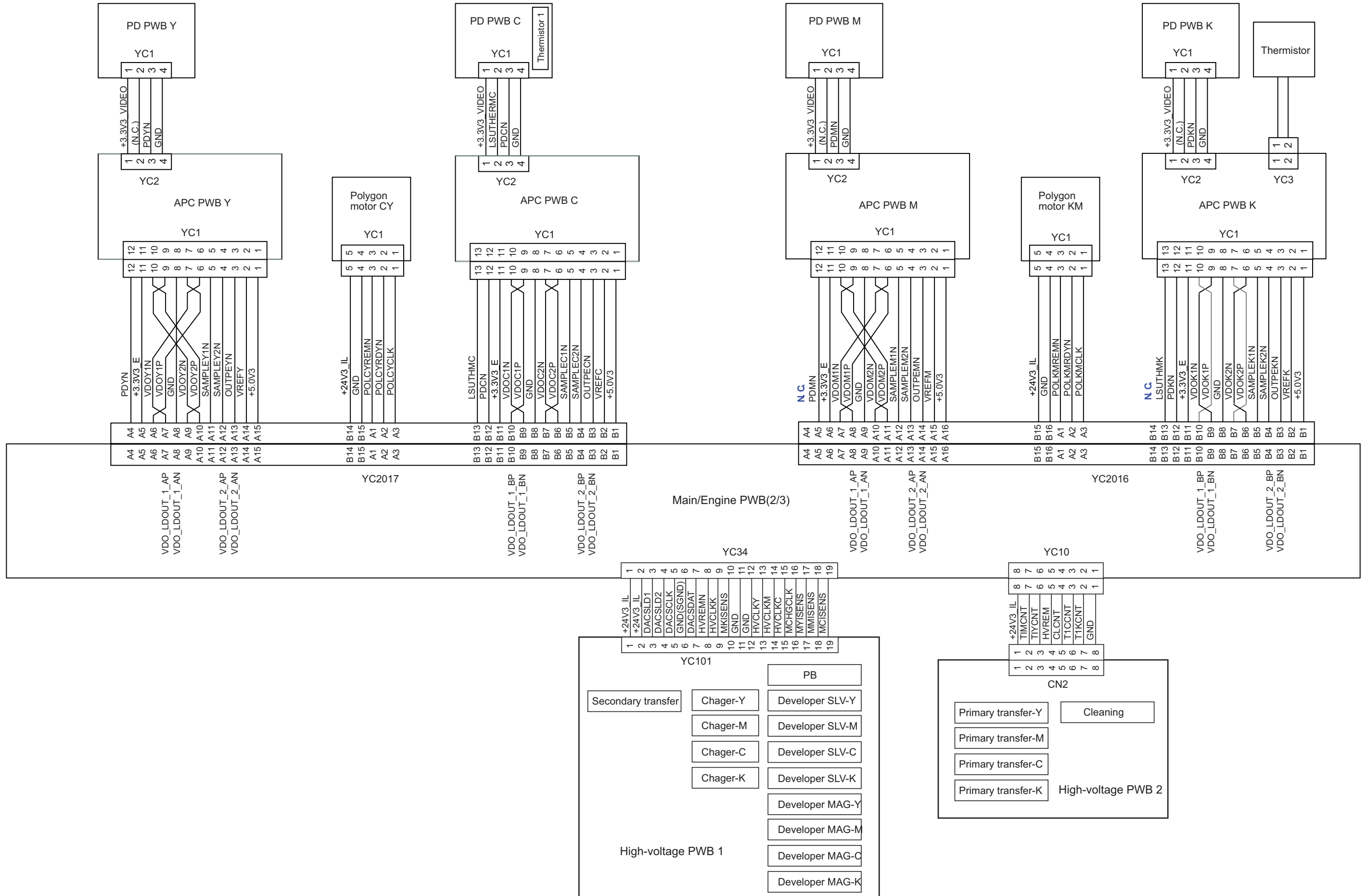




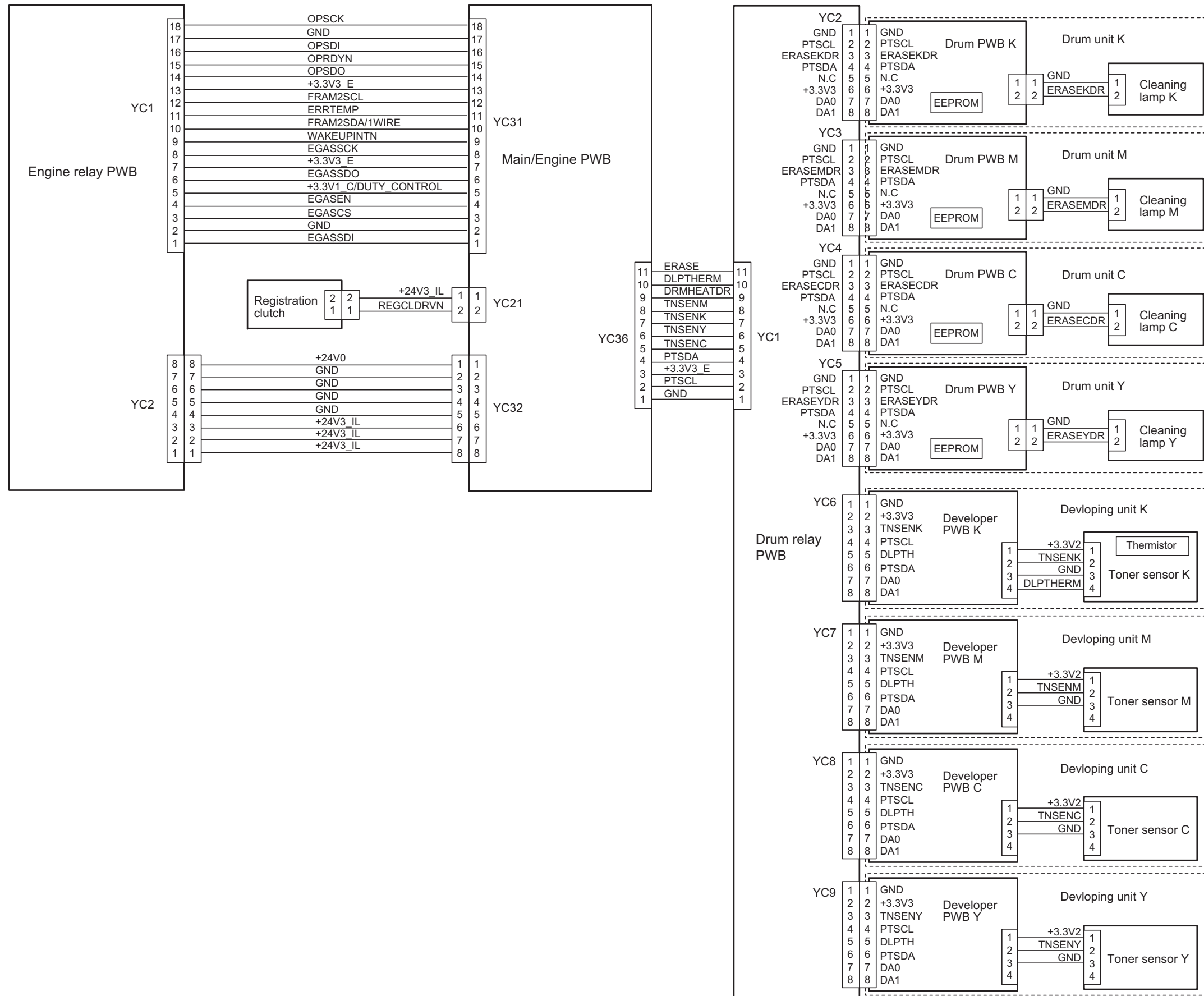
No.2 (30/35 ppm model)



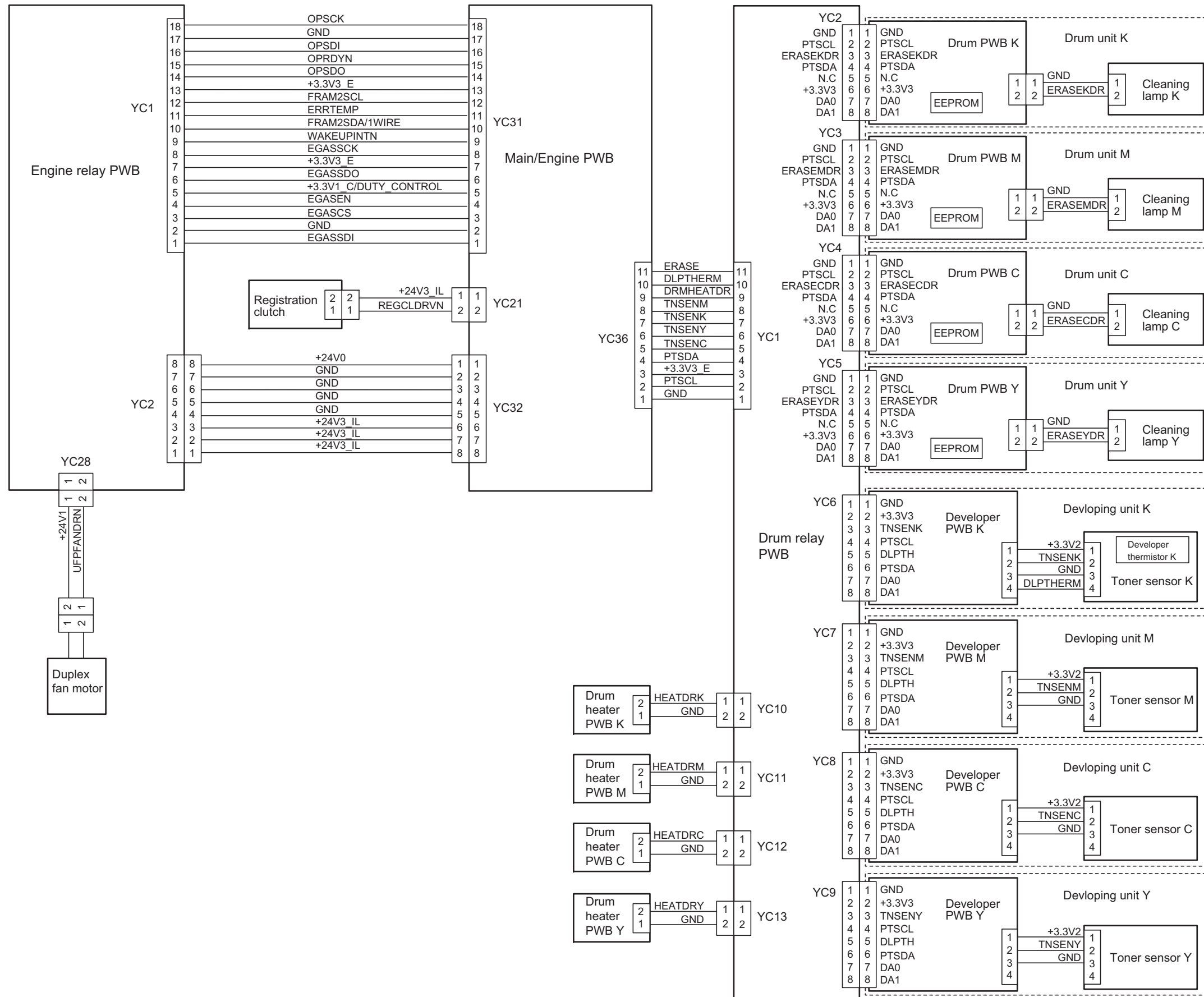
No.2 (40 ppm model)



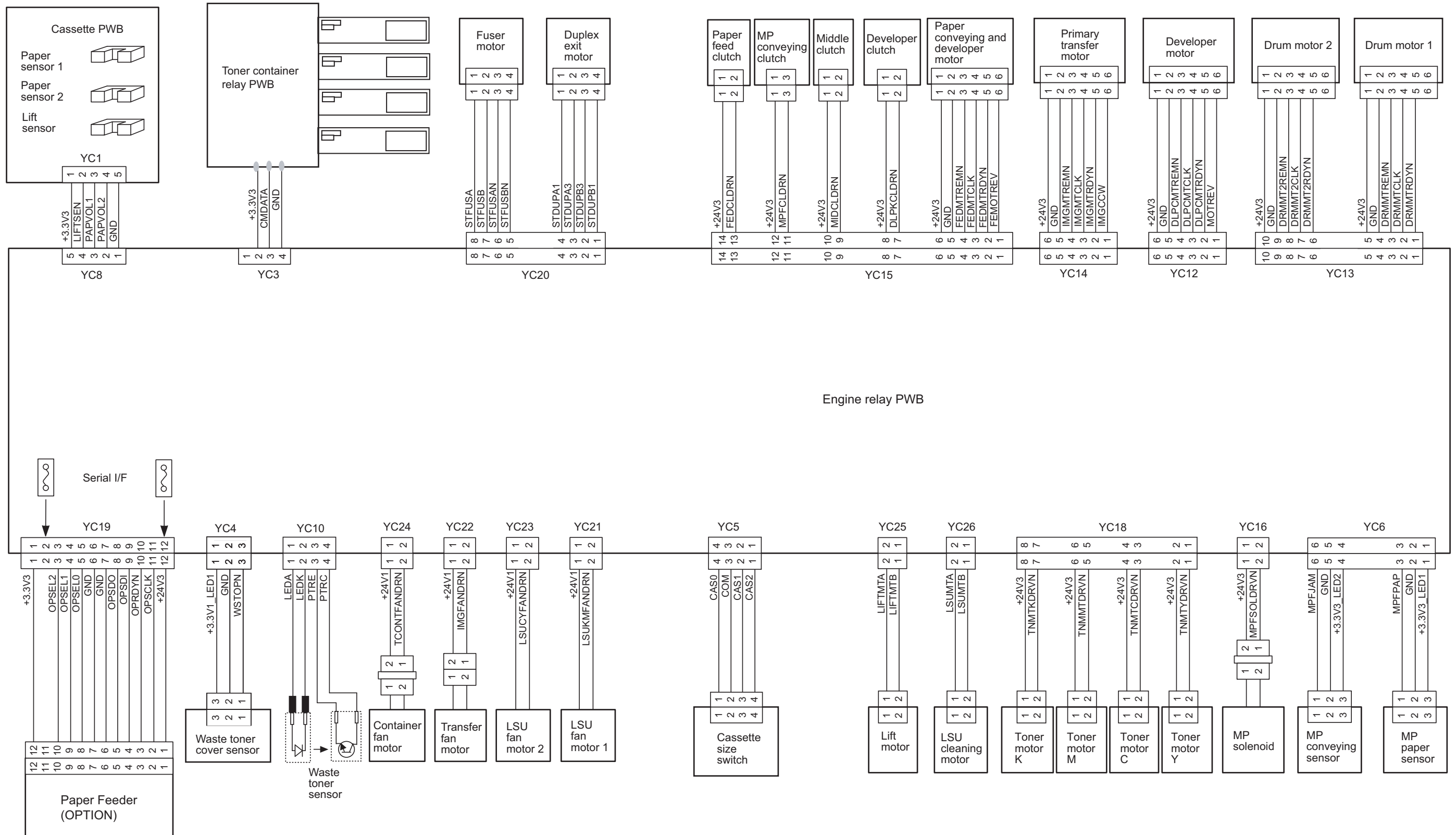
No.3 (30/35 ppm model)



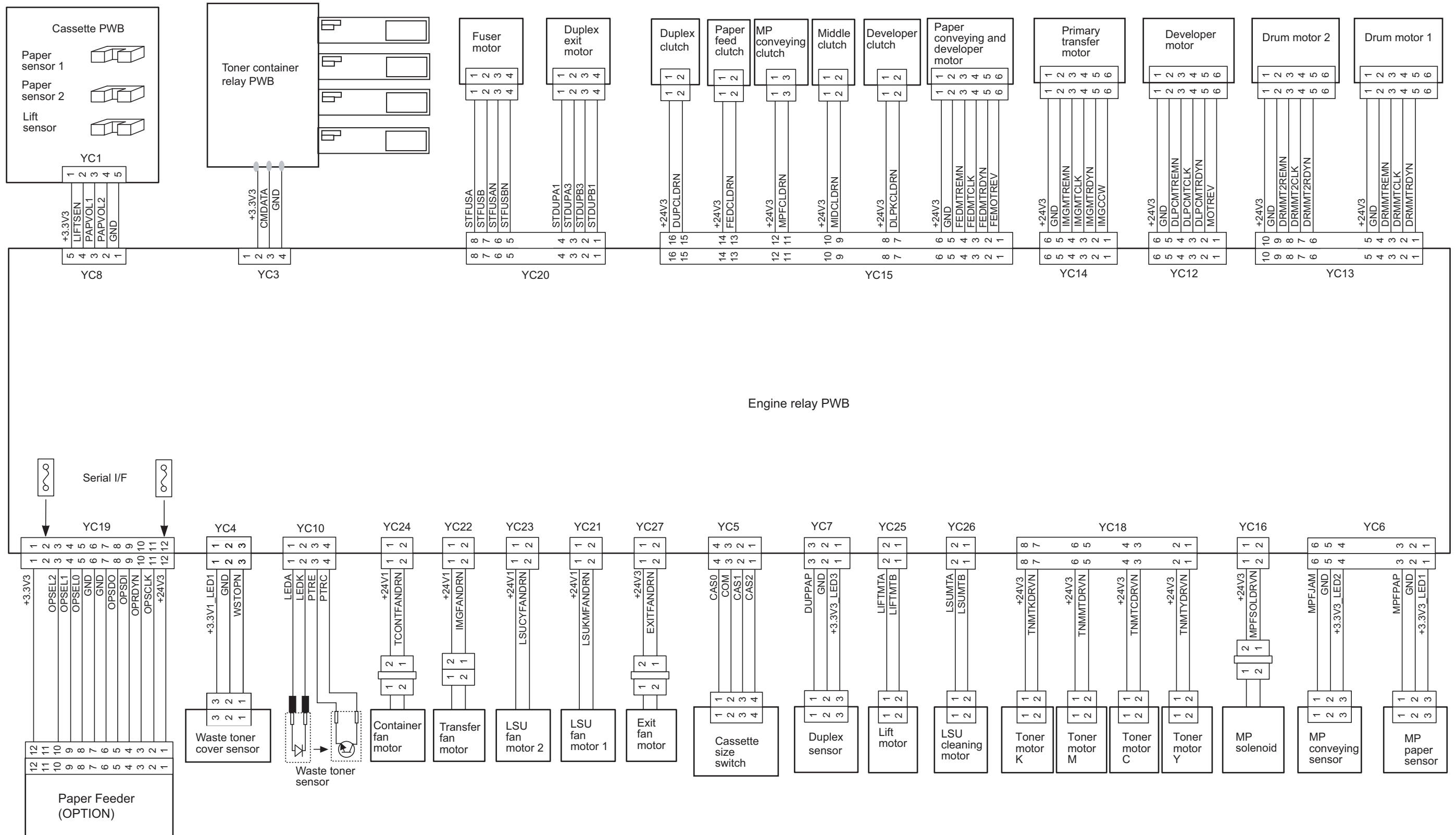
No.3 (40 ppm model)



No.4 (30 ppm model)

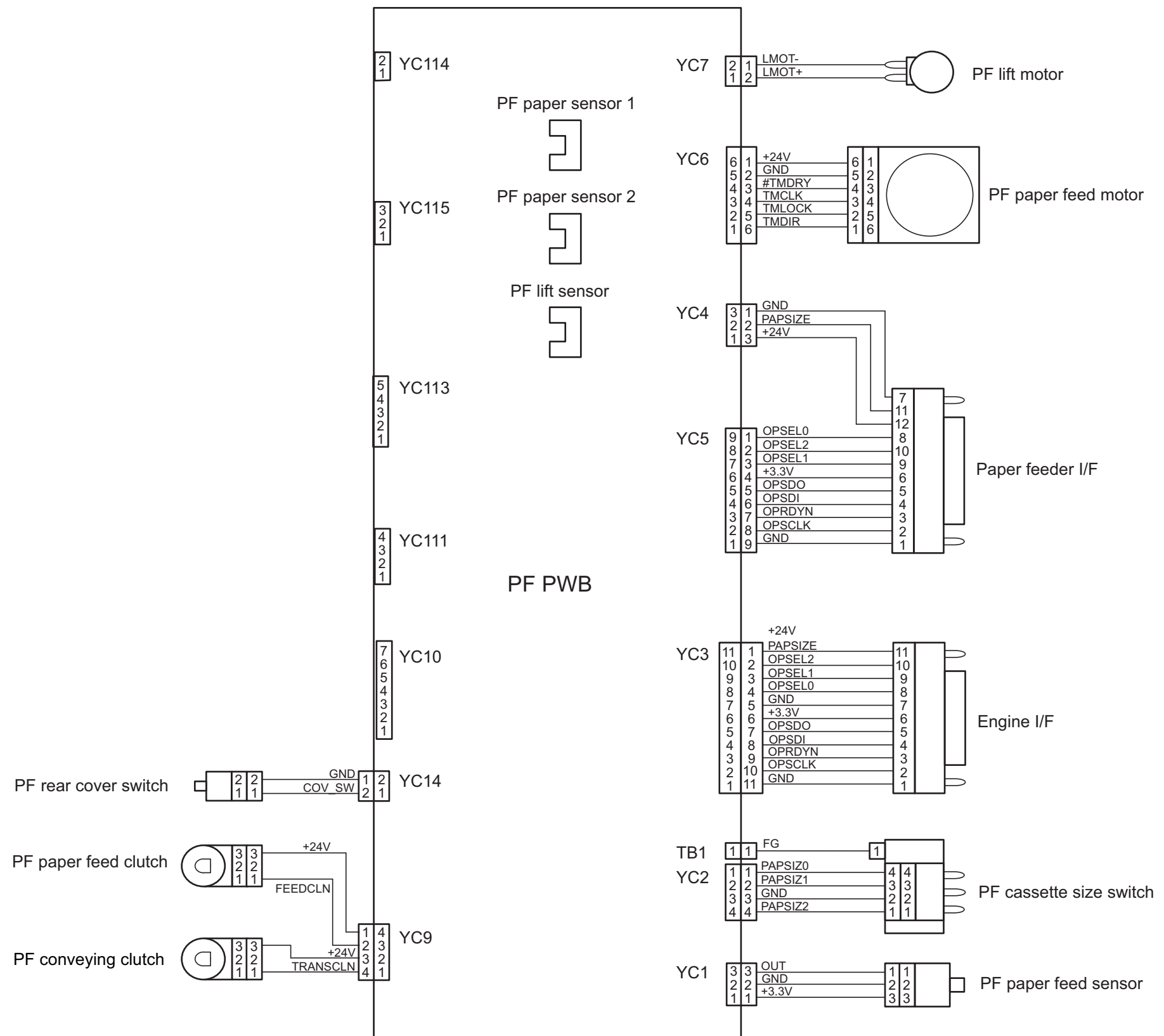


No.4 (35/40 ppm model)



## 9-4 Wiring diagram (Option)

### (1) Paper Feeder (PF-5100)



## 9-5 Installation Guide

### (1) PF-5100 installation guide

#### PF-5100



Installation Guide

Installationsanleitung

Guide d'installation

Guida all'installazione

Guía de instalación

Руководство по установке

安裝手冊

설치안내서

インストールガイド

For U.S.A.:

To install the optional paper feeder unit, contact your service representative.

This unit is for use only with Models ECOSYS M6035cdn, ECOSYS M6535cdn, ECOSYS M6030cdn, ECOSYS M6530cdn, ECOSYS P6035cdn, ECOSYS P7040cdn and ECOSYS P6130cdn.

For Canada:

CAN ICES-3B/NMB-3B

**Installation of PF-5100** 安裝PF-5100  
**Installation von PF-5100** PF-5100설치  
**Installation de PF-5100** PF-5100의設置  
**Installazione di PF-5100**  
**Instalación de PF-5100**  
**Установка PF-5100**

**1**

**2**

**Adjustment of paper size**  
**Justage des Papierformats**  
**Ajustement de format papier**  
**Registrazione del formato carta**  
**Ajuste del tamaño del papel**  
**Регулировка размера бумаги**  
調整紙張尺寸  
용지 크기의 조정  
用紙サイズの調整

**1**

**2**

**3**

**Loading paper**  
**Ladenpapier**  
**Papier de chargement**  
**Carta da caricamento**  
**Papel del cargamento**  
**Загрузка бумаги**  
裝入紙張  
용지 적재  
用紙のセット

**1**

**2**

**3**



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